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The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vcl. 65

JANUARY, 1950

No. 1



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Adenoids and Tonsils	German Measles	Sanitary Privies
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The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	Baby's Daily Schedule.
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Diarrhea.	One to Two Years.
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Table of Heights and Weights.	Instructions for North Carolina Midwives.

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Health Bulletin

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I. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

PARATHION

By C. B. DAVIS, M.D.

State Board of Health, Raleigh, N. C.

It doesn't have to be a dirty color, or of an offensive odor to be dangerous! And it does Not have to go into your mouth to make you sick or to kill you! As recently as just a few years ago, we in medicine were inclined to think almost entirely in terms of germs and poisons being dangerous when introduced into the mouth. And the term filth, by association, was inevitably tied up with our conceptions of disease. But becoming more enlightened, we realize how inadequate were our conceptions of hazards to the public health. Nowadays we are beginning to realize the dangers of the most innocuous looking factors, and to find that many of our shining galahads in science can turn with sword upon us.

Many insects, the black ones, brown ones, green ones have for centuries been a foe of man, destroying his crops and often spreading disease and death. Much of man's history and his customs have been dictated by insects: the great famines due to hordes of grasshoppers, the great waves of bubonic plague through history, malaria, yellow fever, typhus, typhoid fever. Insects have spread such disease and had a profound effect on history. But constantly man has fought back, and with our recent era of rapid scientific progress, has forged powerful weapons of defense and aggression.

Winning a Nobel prize in 1948, the Swiss chemist Mueller made a brilliant advance in this fight with his discovery of DDT. This chemical, augmenting time honored nicotine insecticides, have spelled death for billions upon billions of harmful insects. Then, during World War II, behind the screens of wartime secrecy, German scientists discovered other insecticides completely overshadowing even DDT. These deadly chemicals stayed upon laboratory shelves, in the shining flasks of their birth, until war was over. And now they have been thrown into the battle, as the paratroopers of the insecticides. The most dangerous of these are Chlordane, Toxaphene, Benzene Hexachloride, and last, but not at all least, Parathion.

Unfortunately, the dangers of these chemicals are not effective just against the normal life expectancy of an insect: with a fine disrespect for their creators, they are equally dangerous to humans. And deaths have already resulted amongst those using these insecticides. These fine, white, shining, usually odorless crystals, so harmless looking in a closed flask, have brought quick and dramatic death to humans as well as multifarious insects.

Parathion was used for the first time this summer, principally against the tobacco worm. Its efficiency in killing the tobacco worm was little short of

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miraculous, as extremely small amounts of it killed almost instantaneously any worm, insect or other lowly form of life it happened to contact. And Parathion used exactly according to its manufacturers directions is probably fairly safe. The word, though, is Exactly! In North Carolina this year there were two instances in which it was Not used Exactly. As a result, two people died swiftly, painfully, dramatically. Young, vigorous individuals, they succumbed with startling suddenness. And neither individual put the chemical into his mouth! That is important. Remember it.

This innocent looking white powder was dissolved in water for spraying on tobacco plants: a water clear solution resulted. In spraying the tobacco plants, some of this liquid dampened the clothing of the victims. Apparently it soaked through the clothing to come into contact with the victim's skin. Yes, normal, intact skin. Perhaps some of it may have gotten on the victim's hands and arms that were exposed. At any rate, within two or three hours symptoms suddenly began. A little headache and a feeling of fatigue were rapidly followed by stomach cramps, nausea. In rapid fire succession there were generalized muscular tremors, loss of consciousness, convulsions. Then death.

Physiologically, death is caused by this toxin, which is so powerful that it can penetrate normal skin, in a rather unusual manner. When any muscle in the body contracts, there is a very short

interval, during which an enzyme (or chemical), normally present in the body, "clears the deck" so to speak, in preparation for another muscular contraction. Parathion completely destroys this necessary enzyme. And thus a muscle derived of its "deck clearing" chemical can theoretically contract but one time. Muscles, you know, do our breathing for us, cause our heart to pump blood. So the rapid, tragic effects of such a situation are obvious. The only antidote is atropine, a drug that seems to work better in theory than in practice.

How, then, can we handle such a powerful killer? It can be used, perhaps safely, with the proper precautions. These precautions, however, make it impractical for any but the largest and best equipped commercial growers to use. Trained, intelligent men must use rubber gloves to prevent its contact with hands and arms; a toxic dust type, Bureau of Mines approved respirator must be used to avoid accidentally inhaling the powder when it is being mixed; care must be exercised that clothing is not contaminated by the liquid or powder. And last, but not least, clothing should be changed, and a complete soap and water bath taken every few hours by individuals handling it. These are elaborate steps to follow in using so commonplace a thing as an insecticide. But this powerful two edged sword must be handled with utmost respect in our battle against the insect world.

JOIN THE FIGHT AGAINST TUBERCULOSIS

BY WILLIAM J. SENTER, M.D.

226 Hillsboro St., Raleigh, North Carolina

*"To guard is better than to heal,—
the shield is better than the spear."*
(Oliver Wendell Holmes, 1860)

The availability of the 70 millimeter chest x-ray units in hospitals, schools and health departments has offered a new and sound approach to better

case finding in tuberculosis. There has been much criticism from patients and physicians against the use of the screen test x-rays. I believe so many of these have been ill advised and that no real criticism from patients nor physicians is necessary.

Whatever the individual criticism,

there appears abundant evidence to indicate that control depends on finding the patient with tuberculosis early and isolating or educating him. Only by early case finding, education of the population, especially the tuberculosis and their contacts, and by further research can we hope to rid ourselves of the most tenacious of the contagious diseases.

Those of the medical profession realize that the education of the patients and their families is as much a part of the responsibility of the doctor as the diagnosis and treatment of the disease. The role of the doctor should be concentrated on prevention of spread, since the tools for prevention are more accurate than the tools for treatment. It was the medical profession that showed the way in conquering the epidemics of the Middle Ages. With complete co-operation between the medical profession and the people, means are at hand to control tuberculosis in North Carolina. No group working alone could ever control tuberculosis but complete co-operation between the doctors and patients could reduce our rate by a wide margin in a decade.

The science of medicine has no reason to fear not being needed, since many fields of medicine are developing that were never considered in the realm of the practitioner before. One has only to look at atomic science, emotional and personal problems, industrial medicine, and the spread of modern medicine throughout the world to see vast unexplored opportunities. The income of the medical profession was not seriously affected by the control of rabies, typhoid nor smallpox. There is little reason to believe that it will be affected by the control of tuberculosis.

The 70 millimeter films have been proven a useful tool in case finding by public health groups, private groups, industry, and by the Army and Navy. All agree that the 70 millimeter chest x-rays are not as good as the life size (14 x 17 inch) films. Nevertheless, the 70 millimeter films are cheap. They

can be used as a screen test to cover a larger group, more adequately and more often, than would be practical with the 14 x 17 inch films.

The General Assembly of 1949 appropriated the money to increase the beds operated for the tuberculars by the State of North Carolina from 1100 to more than 1950. The citizens of North Carolina can look forward to the early treatment of those unfortunate enough to develop tuberculosis when the present program has been completed. In a short while no waiting list for sanatorium care will be necessary and hospitalization may be accomplished on the day of diagnosis. The facilities for handling the cases will remove from the public sources of further spread and eventually control the disease. The isolation of the contagious will no longer be a problem when the physical equipment, personnel, rehabilitation, and recreation facilities have been made more adequate. The adoption of full time recreationists and other personnel capable of turning bed rest into a useful and worthwhile period will enhance the morale of the sick. The radio, moving picture, and the coming of television has made chronic illness far more acceptable.

Case finding remains the most important factor in the control of tuberculosis. It has often been said that tuberculosis is not spread by the "tuberculous" but by the "non-tuberculous." If we are in contact with the tuberculous, we take control measures instinctively. However, control measures are not taken unless we are forewarned or suspicious of the possibility of tuberculosis. Often we allow ourselves to become over-exposed due to lack of fear of the disease or because we do not consider the other fellow a possible carrier. Only by early case finding can we make our homes, hospitals, and schools safer for us all. We can screen out the patients with contagious disease by every citizen working in co-operation with his doctor and public health department. The medical profession and public health departments know how

tuberculosis can be prevented, recognized, and cured.

Experiments have shown that exposure to tuberculous people or animals and their products are the only methods of spread of tuberculosis. Classroom studies carried out in the Scandinavian countries have shown that the closer and longer a non-tubercular is in contact with a tubercular, the greater the incidence of exposure and the more severe the infection. In order to break the chain of spread, we must find the cases and educate them and their contacts so that both will be alert to the dangers.

Tuberculosis is on the decline in North Carolina. Our death rate from tuberculosis has gone from 156.4 in 1915 to 23.9 per 100,000 population. Authorities agree that our death rate will continue to go down until sooner or later a leveling off figure may be reached. The death rate may go up again if we allow our tuberculous sensitive people to become exposed to the contagious few in our population. As our carrier rate decreases, our population will become less resistant and control will require our continued vigilance.

There is not a one among us who can afford to relax our control since this is a disease that affects the young in their most productive years. The man years lost due to tuberculosis is greater because the young and otherwise

healthy are most often affected. The highest death rate occurs from 15 to 44 years of age. Cancer and coronary heart disease by comparison affects an older age group and thereby produce less man years lost per patient. The cost for hospitalization of a tuberculous patient is greater than for any of the degenerative diseases of man. The measures for control are quite effective if applied to every human being early in the disease.

We should rid ourselves of the fear of early case finding. Many people are afraid to be x-rayed for fear of having tuberculosis. These people have all to gain and nothing to lose by early diagnosis. Patients recognized late have a greater chance of infecting their families and lose their best chance of recovery. Actually early case finding can offer a patient with tuberculosis a longer life span than he would have had otherwise. Some patients have adopted a way of life that turned the liability of tuberculosis into the asset of longevity.

It should be the responsibility of every citizen to do his share in co-operating against the further spread of tuberculosis. Each family head, each public school teacher, each private physician, and each public health employee should set the example by having himself x-rayed now and at regular intervals. Together, we can beat tuberculosis!

NORTH CAROLINA HOSPITALS BOARD OF CONTROL ALCOHOLIC REHABILITATION PROGRAM

BY JOHN S. RUGGLES
Southern Pines, North Carolina

On July 19, 1949, at the first meeting of the North Carolina Hospitals Board of Control during the present biennium, to which three hundred thousand dollars has been appropriated for an alcoholic rehabilitation program under HB. 623, the Chairman of the Board appointed an Alcoholic Committee for the alcoholic program, and authorized visits to alcoholic rehabilitation centers in other states, and the appointment

of an Alcoholic Advisory Committee.

Following visits at alcoholic rehabilitation centers in Virginia, New York, and Connecticut, the report of the Alcoholic Committee Chairman was submitted to the North Carolina Hospitals Board of Control September 16, 1949, containing the following recommendations:

"That the Alcoholic Committee be authorized, with approval of the Chair-

man of the Hospitals Board, to immediately employ a full time Executive Director for the Alcoholic Committee, and such other personnel as may be required. The Executive Director must be of such caliber that he can deal successfully with top level business and professional men. He must be thoroughly grounded in the problem of alcoholism, visiting and studying the facilities for the care and treatment of alcoholics in various states.

"That we then proceed as follows:

FIRST, that we provide an intensive educational program on alcoholism throughout the state, through various means, as previously tested in numerous other states.

SECOND, that we authorize a study and survey of North Carolina's Alcoholic Problem.

THIRD, that we establish by delegation of operation, small alcoholic facilities in various local hospitals, with the cooperation of local medical groups, Civic and Welfare Agencies, Alcoholics Anonymous, and others.

FOURTH, that we establish a separate Alcoholic Rehabilitation Center at Camp Butner, for the care and treatment of those requiring additional care."

The Alcoholic Advisory Committee, appointed by the Chairman of the North Carolina Hospitals Board of Control, consisting of fifteen members, all recovered alcoholics and workers in their AA groups, met October 14, 1949, and gave their full endorsement to the report of the Alcoholic Committee Chairman and agreed that the choice of an Executive Director, and his employment as soon as possible, was the most important feature.

The problem of alcoholism was next presented before the Medical Advisory Committee of the Hospitals Board, consisting of twenty-four members and including some of the most eminent doctors of the State, meeting at Raleigh October 27, 1949. After considerable discussion, the following resolution was approved by the Medical Advisory Committee:

"That the Committee is assembled for

the advice of the Board and, that first, be it resolved that it is our suggestion that Dr. David A. Young, the General Superintendent under the General Board, improve the administration as far as possible at Dix Hill and second, that an example, perhaps a small unit or units, be developed elsewhere in the state and three, an educational program be developed as would expend this money in informing the people of North Carolina of the dangers of alcoholism, to the end that the three hundred thousand dollars be expended for a good purpose, and that they all be under the State Hospitals Board of Control. That he use Alcoholics Anonymous, religion, any good business executive that he might be able to get and separate the alcoholics from the stigmas of the State Hospital, if he thinks this is right."

At a meeting of the North Carolina Hospitals Board of Control November 4, 1949, the following motion was unanimously adopted:

"The Executive Committee, upon recommendation of the Alcoholic Committee and General Superintendent be, and hereby is, authorized, with the approval of the Chairman of the Hospitals Board, to employ an Executive Director for the Alcoholic Committee, and such other personnel as may be required.

"That the General Superintendent make a report on his visit to Alcoholic Centers and present general recommendations as to the program.

"That the Alcoholic Advisory Committee and the Medical Advisory Committee be requested to make recommendations for the Executive Director.

"That the said Executive Director, under the direction of the Alcoholic Committee and the General Superintendent shall initiate, develop and carry out the program for persons suffering from alcoholism as authorized by H. B. 623.

"That the General Superintendent shall be responsible for the custody, care, and treatment of inebriates who are charges of the State."

The report of Dr. David A. Young,

General Superintendent of the North Carolina Hospitals Board of Control, following his trip to New York and Connecticut where he visited various alcoholic centers, was submitted to the members of the Alcoholic Committee and the Executive Committee, and at a joint meeting on December 9, 1949. On recommendation of the Alcoholic Committee, the General Superintendent, Dr. David A. Young, was empowered by the Executive Committee to proceed with the selection of an Executive Director, together with such other personnel as may be needed, and authorized him to proceed immediately with the recommendations contained in his report, which are as follows:

"1. Employment of an Executive Director whose functions will be primarily educational or informational, whose work will include visiting areas of the state in speaking to civic groups, mental hygiene societies and similar community groups and who will try to establish relations with educational institutions throughout the state, probably from the high school level up. In addition to this, he should maintain contact with the Alcoholics Anonymous and should carry on the work of the central office in this respect but still with the consultation and supervision of both the Alcoholic Committee of the Board and of the General Superintendent. He should also formulate plans for his activities which should be presented and discussed before being put into operation.

"2. Plans should be made through the Executive Director for cooperation with the different Alcoholics Anonymous groups. These together with the Alcoholic Advisory Committee should make further recommendations and, if possible, commitments as to what they can and will be willing to do in the program.

"3. It is recommended that out-patient facilities be increased, if possible, by the addition of trained social workers to the already existing mental hygiene clinics in the state. These are located at Raleigh, Durham, Charlotte, Winston-Salem and Asheville. The Wilmington Clinic is now inactive and the

Raleigh Clinic is shaky. In order to do this, some fairly definite policy should be worked out for carrying the salary of these workers with the plan that they would be devoted entirely to dealing with alcoholics and that they should be able to get psychiatric supervision from the Director of the clinics.

"4. The Executive Director, together with the local Alcoholics Anonymous, should make an effort to deal with the local hospitals in trying to provide for short time hospital care of alcoholic cases. Here again some fairly definite financial safeguard should be worked out if there is intended to be any State money put into the permanent improvements of the hospital for this purpose to the return which may be charged for the alcoholic patient, and any State money which might be used for maintenance of the alcoholic patient in the hospital if other funds are not available in the family or locally. It would be my immediate recommendation in this last respect, since the State has already established a policy of not paying for the alcoholic patients except through the county, that this last step should be avoided definitely, if need be by some subsidizing payment to the hospital for the necessary changes in its building. These in a sense may not be necessary since the Medical Care Commission is responsible and would approve some changes in a hospital plan to make such a hospital able to accept acute psychiatric cases. These changes would undoubtedly make it possible for the alcoholic patient to be received in this unit, which is somewhat similar to an isolation unit. At least this part of the problem should be approached with particular care.

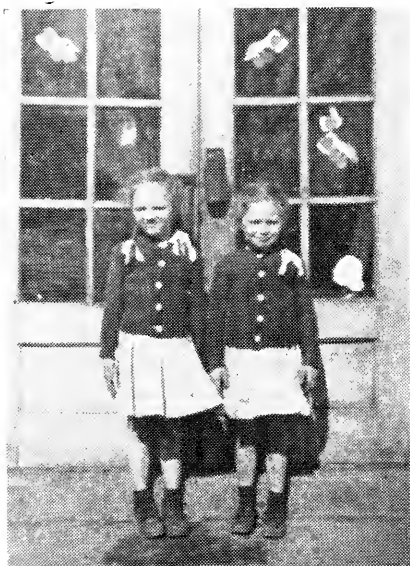
"5. A budget should be set up for the admission of voluntary alcoholic patients to a unit at Butner apart from the State hospital there; if possible, run by a physician but in any case requiring that the patient should not be in need of medical attention for any acute physical or alcoholic condition on admission. This would be along the lines as already recommended to the Board."

TONSILLECTOMY

By B. B. McGUIRE, M.D.

District Health Officer

Elizabeth City, North Carolina



Joyce Ann

Jo Ann

Age 6 years

First grade in an Eastern Ohio School
in 1947

All of us in medical practice and in the public health field, and many parents in their own families have seen marvelous improvement in the general health of children following thoro removal of tonsils and adenoids. In noting these spectacular improvements in an individual child, we cannot say definitely that the child's improvement would not have taken place if the throat had not been cleaned out. Furthermore, when infected tonsils are not removed, no one can say with certainty that such marvelous results would take place if these things were done. Having been personally conscious of the marked improvements almost universally noted from thoro tonsillectomy and adenoidectomy, it was my happy privilege to examine the twins pictured above in 1947, and to realize

the nearest approach possible to proof of the actual effects of this operation and the marked improvement in the child's health as a result.

When I examined these twins, the mother was present. She informed me that at the age of three years, the twins were exactly the same weight and height. At that time Joyce developed some trouble with her throat—tonsillitis and other symptoms of tonsillar infection. The doctor recommended that her tonsils be removed. The father said they had better take both their tonsils out. The doctor told him that Jo Ann did not need the operation, stating that her tonsils were not bad.

Joyce had her tonsils and adenoids thoroughly removed at the age of three years and Jo Ann had hers when the picture was made. Joyce was $3\frac{3}{4}$ pounds heavier, and exactly two inches taller. Neither child had been sick in the three years following the tonsillectomy except colds, Bronchitis and etc. and both had these upsets together. Jo Ann's tonsils were slightly redder than normal, about average size and her cervical glands enlarged slightly but not painful. In other words her tonsils did not look bad.

Joyce came up for the examination smiling, confident and showed complete cooperation in the tests. Jo Ann was depressed, afraid to be examined, and very non cooperative. Joyce's attitude showed even greater superiority over Jo Ann than the difference in weight and height. We all know that these twins had the same food, clothing and care, with the same opportunity to grow and develop. The only difference between them was that Joyce's tonsils and adenoids were out, Jo Ann's in. What good then, or harm to our health are tonsils and adenoids?

So far as we know tonsils and adenoids were placed in the throat as filters to filter bacteria and harmful

dust from the air we breathe before it enters the lower air passages and lungs. It seems that there are more bacteria, dust or other harmful agents than was anticipated, and this results in choking of the filters. A choked filter is far worse than no filter at all, and by harboring bacteria and their toxins, the tonsils become a local sewer!

These bacteria and their toxins, in my opinion, thru absorption thru the lymphatics and the cervical lymph nodes, are a constant drain on the health and well being, to a greater or less degree, of all children. These bacteria and their toxins, over flowing the lymphatic system of the neck into the blood stream can, and in my opinion, do cause almost all cases of Arthritis, Endocarditis, Rheumatic fever, Chorea, Otitis media, many cases of Acute Parenchymatous nephritis, and many cases of septicemia in children.

Similarly, in later life this focus of infection can easily cause Coronary disease, Myocarditis, Arteriosclerosis and Chronic Parenchymatous and Chronic Interstitial nephritis and Chronic Otitis media with loss of hearing.

I have no figures to substitute my opinion and have done no research on the problem. After practicing medicine for twenty years and public health for ten more, all the while studying pa-

tients from the view point of "Could this disease have been prevented and if so, why wasn't it done?", I have arrived at the opinions here—in expressed. It is a great field for study, research, and action if we are to prevent the disease referred to, such as Arthritis, Endocarditis, Rheumatic fever, Otitis media, Chorea, Acute Parenchymatous Nephritis in childhood, and in later life, Coronary disease, myocarditis, Chronic Interstitial and Chronic Parenchymatous Nephritis, loss of hearing and other diseases.

It can be said, of course, that to draw conclusions from one case is foolish. Ordinarily this is true, but I dare say that not one tenth of one percent of twins of the same sex and equal height and weight have shown the same experience as these twins have—that is, one to have this operation, and the other to not have it. It is the first time in 30 years that I have found the situation. It leads me to wonder whether tonsils and adenoids are not a mill-stone, to a greater or less degree, around the neck of every child, and even every adult.

The tonsils and their deep crypts and the adenoids are, in my opinion, the *only natural direct avenue* thru which bacteria and their toxins may enter the blood stream, virtually unobstructed.

NOTES AND COMMENT

BY ACTING EDITOR

DIABETES is again being recognized as a public health problem. Years ago shortly after insulin was discovered and made readily available many of us were disposed to think that the diabetes problem had been solved. During recent years we have found that we are not justified in neglecting diabetes, that it is still widely prevalent and that although insulin is very helpful in the treatment of the disease, diabetes is a condition which is not cured but can only be controlled. Intelligent

interest has been manifested in the diabetes problem By Dr. W. B. Hunter, Harnett County Health Officer.

It is refreshing to read in the Wilmington News of January 4th of the activities of the Wilmington Junior Chamber of Commerce—The article as follows is self-explanatory:

"The Wilmington Junior Chamber of Commerce's third annual diabetic detection drive—aimed at making the public conscious of detecting and treating diabetes was initiated last night.

In direct charge of the drive, which was launched at the club's weekly supper meeting, was the chamber's public health committee. Last night's meeting was presided over by Ed. L. Ward, who recently became president of the organization.

One of the chief aims of the campaign, officials said, is the early detection of diabetes in children, especially those in the first through third grades.

A spokesman for the committee urged parents to give their children a "sugar clini-test" and mail results and other data to the Jaycee public health committee on a penny postcard.

Testing equipment can be obtained at low cost from local druggist who will instruct the parents on its use, he said. Post-cards should bear the child's name, the parent's name and address, the name of the school, the child's grade in school, and the resulting color of the test.

It was particularly important to make the test on the child six weeks after a fever of any kind, and especially if the child shows symptoms of increase in thirst or abnormal loss of weight, he explained.

If diabetes is detected early in life and treated, complications can be avoided, although the disease cannot be cured, he said.

It was pointed out that during last year's campaign 700 tests were made in New Hanover county. Out of these, seven children were found to have the disease. These seven children are living almost normal lives because the disease was caught in time, he said."

Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent. The slogan "Press on" has solved and will always solve the problem of the human race.

—Calvin Coolidge

Whooping Cough Yields To Antibiotic Drug

Chloromycetin, an antibiotic drug, is a quick, easy, safe and exceedingly effective treatment for whooping cough, clinical study shows.

The drug was tested last fall in Bolivia during a severe epidemic of whooping cough which caused death rates twice as high as those in North America.

Dr. Eugene H. Payne, Detroit, of Parke, Davis and Company, the pharmaceutical house which developed the drug, and a group of Bolivian doctors report their findings in the Journal of the American Medical Association.

The Bolivian doctors are Miguel Levy, Chief Medical Officer, Inter-American Corporate Service of Public Health; Gaston Moscoso Zamora; Moises Sejas Vilarroel and Edwardo Zabalaga Canelas, all of Cochabamba.

Seven children ranging in age from three months to eight years were treated with chloromycetin. All were clear of fever on the second day after the first dose of the drug was given, according to the doctors.

Coughing fits generally were greatly decreased on the second day, and in all seven patients disappeared on the fourth day.

"Since the supply of chloramphenicol (chloromycetin) was limited and there was such a large number of patients, only those who were seriously ill were treated with the drug," the doctors say.

"Chloramphenicol was given in varying doses depending on the weight of the child, and was administered by mouth in most cases. Untoward reactions to chloramphenicol appear to be negligible."

* * * *

Aureomycin, the golden-colored antibiotic drug, is also effective against whooping cough and lymphogranuloma venereum, a minor venereal disease, two Minneapolis doctors reported.

Recent experimental and clinical studies indicate that aureomycin is effective in whooping cough, Drs. Wes-

ley W. Spink and Ellard M. Yow of the University of Minnesota Medical School said.

Aureomycin appears to be of little or no value in chickenpox and mumps, however, the doctors found.

A.M.A. Council Warns Against Unwise Use Of Cold Tablets

The Council on Pharmacy and Chemistry of the American Medical Association at a recent meeting warned against indiscriminate use of antihistaminic substances now being widely promoted for prevention and treatment of colds.

The council said:

"The council recognizes the evidence that has been accumulated relative to such uses but it is not convinced that this is sufficient to warrant the positive statements that are being made.

"Cases already are reported and records show that one-third of those who take these drugs become drowsy or even fall asleep while at work or in occasional cases even when driving cars or operating machinery.

"Experience with these drugs is not yet long enough to know whether or not they are harmless when used over long periods of time. Furthermore, the amounts taken in persistent colds may be definitely beyond what has been established as safe.

"The council expects to publish a careful review of the present status of these products so that physicians who prescribe them may be aware of the possibilities."

Doctor Warns Against Fluorine Use In Water As Teeth Saver

The experiment of putting one part per million of flourine in municipal water supplies in order to prevent tooth decay is being prematurely tried, in the opinion of Dr. Demarious C. Badger of Hobbs, N. Mex. Flourine is a non-metallic gaseous element akin to chlorine.

Dr. Badger is making this observa-

tion in the American Journal of Diseases of Children, published by the American Medical Association, calls the practice "a faulty procedure" which will "lead to unhappy results."

"Flourine as related to tooth decay has not had nearly the exhaustive study dental fluorosis (chronic poisoning with flourine) has had," he reports. "There is no quarrel as to the validity of both conditions, but there has not been established by all investigators the amount of flourine which is nontoxic and also effective in prevention of tooth decay."

He points out that the United States Public Health Service, which is fostering this experiment, stated that one part per million (1 p.p.m.) is not toxic.

"There are several areas in the United States where the water has a natural flourine content of 1 p.p.m.," he writes. "I am practicing in such an area. In 1937, after moving from Michigan to eastern New Mexico, I was impressed by the number of attractive young persons who were disfigured by defective teeth, which defects on cursory notice looked like severe decay. I had never before seen dental fluorosis. I asked several of the patients what was wrong with their teeth and the reply was invariably, 'Texas teeth!'" Dr. Badger then undertook an examination of the school children in Lea County, N. Mex., and found a mild to moderate defect in 18 per cent of the children. He urged the use of distilled water for all children under 6.

In a subsequent study of 90 children, screened out of 300 to eliminate a migratory population, he found enamel defects in 28 instances, he says.

Nine children had been given distilled water in the first two years of life and were without defects. In a group of 65 children who had received water from the municipal water supply, 18 (36 per cent) had some defect of enamel. A sample of the water showed a flourine content of 0.9 p.p.m. Sixteen children had used water from private wells, ten having defects. The flourine content of the wells varied.

Dr. Badger comments: "With so few

cases, it is impossible absolutely to determine the toxic level, but among the children examined, dental flourinosis was observed in 30 per cent of the children who drank water containing 0.9 p.p.m. of flourine."

He recommends: "If flourine is added to the municipal water supplies, the level should be lowered to 0.7 p.p.m. If the level of flourinosis is above 0.7 p.p.m., then children under 3 years of age, and preferably under 6, should use filtered or distilled water in order to prevent a defect in their permanent teeth, which are forming during these years."

Wax Crayons Poison Children

Several cases of severe poisoning in children from eating wax crayons have been reported, according to an editorial in the *Journal of the American Medical Association*.

After eating red, orange, or yellow crayons, small children developed a condition known as methemoglobinemia, in which changes occur in the oxygen-carrying red pigment of the red blood cells, the editorial says.

The condition is believed to result from absorption of dyes used to color the crayons. It also has been reported in babies from drinking well water containing excessive amounts of nitrates and from unlaundered diapers newly stamped with aniline dyes.

Methylene blue, a dye, is effective in treating the poisoning, the editorial points out.

Warn Of Ill Effects From Overdoses Of Aspirin

A warning that aspirin acts as a poison when taken in too large doses is given by three Philadelphia doctors.

Excessive amounts of the drug have a toxic effect on the brain, kidneys, and other organs, Dr. Bernard L. Lipman, Sidney O. Krasnoff, and Robert A. Schless point out in the *American*

Journal of Diseases of Children, published by the American Medical Association.

They report five cases of poisoning from overdoses of aspirin. Three patients were children, and there were two deaths in the series.

Name Of Hygeia, Health Magazine To Be Changed To Today's Health

A change in name to *Today's Health*, effective with the March 1950 issue, is announced in the current (January) *Hygeia*, health magazine of the American Medical Association.

The masthead of the January number also carries for the first time the name of Dr. W. W. Bauer, Chicago, as editor, succeeding Dr. Morris Fishbein, Chicago. Dr. William Bolton, Chicago, is the new associate editor, succeeding Dr. Bauer. Ellwood Douglass will continue as managing editor.

Hygeia was established by the American Medical Association in 1923. Written for the layman, it has come to be one of the most widely quoted health education periodicals in the United States. There will be no change in fundamental policy under the new editorship or new name.

Dr. Bauer received his M.D. degree from the University of Pennsylvania in 1917. He served as a Captain in the Army Medical Corps in World War I. After two years of service in the Milwaukee Health Department he became health commissioner of Racine, Wis., in 1923, serving until 1931.

He joined the American Medical Association headquarters staff in 1932 as director of the Bureau of Health Education.

'Tired Feeling' Is Major American Disease

Call it "that tired feeling," if you wish, but doctors have a lot of more complicated names—chronic nervous exhaustion, psychoneurosis, benign nervousness, functional disorder, anxiety

state, neurasthenia, constitutional inadequacy and others.

It is a major American disease which affects perhaps one out of every two persons seen by doctors, according to a Stanford University physician.

"It is generally believed that from one third to two thirds of all patients who seek medical help have as the most significant cause of ill health an emotional or neurotic disturbance," Dr. Dwight L. Wilbur of Stanford University School of Medicine, San Francisco, writes in the *Journal of the American Medical Association*.

"This disturbance may manifest itself in a large variety of ways, but nervousness and fatigue are among the commonest symptoms."

Other symptoms are insomnia, irritability, inability to relax, fatigue in the morning, mental conflicts, difficulty in making decisions and all sorts of aches and pains, particularly disorders of the heart and digestive system, he says.

The usual causes include an emotional problem or some situation in the victim's life, overwork with inadequate rest and relaxation, and inadequate recovery emotionally from an

infection, according to Dr. Wilbur.

"There is not just a single level, but a wide range to the limits in structure and function of the normal person," he explains. "Acute fatigue or nervousness can be induced in any normal person by lack of sleep and sufficient threat to security; recovery generally is rapid with sleep or removal of the threat. When these symptoms are chronic the period of recovery will be longer, even after the cause is removed.

"Improving or relieving the patient's symptoms is an individual problem in each case. It cannot be accomplished until the patient understands the nature of his symptoms and accepts it reasonably well.

"If the cause of the symptoms is merely the stress of anxiety over a nonexistent organic disease or the result of overwork, relief usually can be obtained rapidly by simple reassurance or by adequate rest or a vacation.

"If, however, the distress is from a more complicated and less easily solved external cause, or if it deeply involves one of the major emotions, more detailed treatment and psychotherapy will be necessary."

LESS INFECTION VIA INSPECTION

by

KELLY G. VESTER, R.S.

Rocky Mount City Health Department

Rocky Mount, N. C.

Before you visit your favorite restaurant do you pause to consider the possibility of encountering the unseen hazards of unwholesome food, improperly sanitized dishes or diseased personnel? Are you the kind of person who accepts a glass of milk from the waitress, a steak from the grocer or hotel room service without considering the potential health hazards involved? If you are you can thank your lucky stars that the public health sanitarian makes it his business to know about, and regulate according to local codes, these and many other services which vitally effect

your health and the community well-being.

To promote your safety the public health sanitarian is today playing a role of ever increasing importance. As an essential part of the overall public health effort he is driving relentlessly to make the American community a safer place in which to live. In the interest of better public health, which includes your health and mine, he wages a daily battle to teach cooperative vigilance to combat manmade insanitary conditions. No longer is the sanitarian an untrained inspector who prowls the

community with the law in one hand and a club in the other. The sanitarian of today through knowledge, service and leadership is an important part of the American community machinery, functioning for your better health, greater happiness and in many ways promoting your prosperity.

Today numerous local and state sanitarian's organizations are doing much to raise inspection service levels. On the national front the National Association of Sanitarians, Inc., is endeavoring to standardize and professionalize the sanitarian's status. This organization, which is an outgrowth of the California Association of Sanitarians, was incorporated under the laws of the State of California on November 5, 1937. Today it has members-at-large in every state in the union. Also, numerous groups in the other states have obtained charters as section affiliates of the national organization. Today the organization's journal, *The Sanitarian*, circles the globe and can be found in all modern libraries.

Candidates for membership in the National Association of Sanitarians are required to have specific qualifications entitling them to membership. The required admittance standards are a certification that members have earned the right to sign themselves R.S. (Registered Sanitarian). The organization's slogan: "Sanitation-The Beacon Light of Public Health", is indeed symbolic of the sanitarian's never ending efforts to forestall the ravages of communicable disease.

In his difficult role as community disease detective the public health sanitarian's services have proved to be a vital factor for promoting the community well-being. Probably no undertaking has a more widespread effect upon community life than a progressive, well balanced sanitation program. Although the sanitarian is trained primarily for disease prevention teamwork, when epidemic strikes he goes into action.

Today throughout our nation, in the teeming cities and sparsely populated rural districts alike, the public health

sanitarian contributes unselfishly to the community safety and the national well-being. His role is that of a salesman, his wares the most precious segment of mankind's heritage, better health. Because his preparation for this service is never ending his versatility rivals the most exacting standards required by other fields of endeavor. His objective, a high standard of community health and well-being, is reflected in his efforts to promote a high standard of community sanitation.

If you have not done so already you would be doing yourself a favor to become familiar with your local sanitarian's program. After discussing with him some of the problems encountered in some of his many supervisory activities you will readily understand why it is necessary for him to be a diplomat as well as a keen judge of human nature. Most of all you will realize that his scope of day to day endeavor is a broad gauged program designed to promote the community well-being.

For instance, do you realize the significance of the A, B and C sanitation grade signs that you see posted in restaurants, meat markets, abattoirs, hotels, tourist homes, hospitals and trailer camps? Did you know that these places are inspected and graded regularly with an itemized numerical score determining the A, B or C sanitation rating?

As an ambassador of goodwill from the health department the successful sanitarian must have a pleasing personality, qualities of leadership and personal magnetism. His vocation as a salesman of sanitation requires that his education be continuous. The sanitarian's success or failure is determined by his ability to acquire and utilize a working knowledge of many things.

The public health sanitarian must have a working knowledge of disease and their modes of transmission. The protection of both public and private water supplies is a necessary item of the sanitarian's knowledge. Also, waste disposal, plumbing, rodent control and some knowledge of bacteriology are essential. Restaurant layout, food ser-

vice methods and maintenance technique require his constant supervision. In his particular field he has supervision of one of America's largest industries and the processing of twenty five percent of the national food production.

Also, the sanitarian is the guiding light of all important milk industry. This industry which produces twenty five percent of the foods consumed by the average American has found the sanitarian's knowledge a useful instrument of better milk production. This broad in scope in view of the fact that contribution to better public health is a preventable disease can result not only in less human misery, but also in saving money for the community and the individual as tax payer.

Now, what does all this mean, this discussion of how certain diseases have been brought under control? It might be well to remember, in this connection, that the victory has come largely through education, as well as scientific discovery. No matter what means are available for achieving a definite end, that end cannot be achieved, unless we take advantage of the facilities at our disposal.

Americans are not a gullible people. They have to be shown, and this is a commendable spirit. On the other hand, there are those who refuse to inform themselves or to act after they are informed. Such people are not good citizens. They are enemies to themselves and to the community in which they live, because we know that the person who contracts a disease does not limit that disease, but that, on the contrary, potentially at least, transmits it to others. Therefore, he is doing his fellow man a disservice, if he permits himself to become the victim of a disease that is preventable or controllable.

The practitioners of both curative and preventive medicine know that there are certain devastating diseases which, at the present time, are neither preventable nor controllable, including what we know as the degenerative diseases. In this field we find cancer, against which a terrific

campaign is being launched in this country at this time. North Carolina has its own cancer program which we shall not undertake to discuss at this time, but which bids fair to render great assistance in the early detection and consequent treatment of cancer which can be cured only when it is found in its early stages. To aid this campaign, the Legislature of 1949 at which many constructive things were passed, a law making cancer a reportable disease was passed. This law required the reporting of cancer to local health officers within five days after diagnosis or within five days after reasonable evidence that one has a cancer.

After all, there must be at least a certain amount of education in connection with any program for either the prevention or control of any of the diseases in that category. Undoubtedly, one of the largest fields today is that of cancer, toward the control of which we are just beginning to make some degree of satisfactory progress. A further discussion of cancer is anticipated at an early date. This is a subject which at the present time must be considered step by step.

"It's MY right-of-way," muttered Red,
But the other guy came right ahead.

Red found that his brakes
Didn't have what it takes.

He didn't stop QUICK — he stopped
DEAD!

Ease up in a freeze-up! The National Safety Council says when the mercury goes down, traffic accidents go up. The reasons: slippery pavement, poor visibility. Keep your mind and your windshield clear—and slow down!

Careless driving can wreck a fender—
or a family!

Take your time in wintertime!

Tip to pedestrians: Think for two—
the driver and you!

ALICE NOBLE, LIBRARIAN
SCHOOL OF PHARMACY, U.N.C.
CHAPEL HILL, N. C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

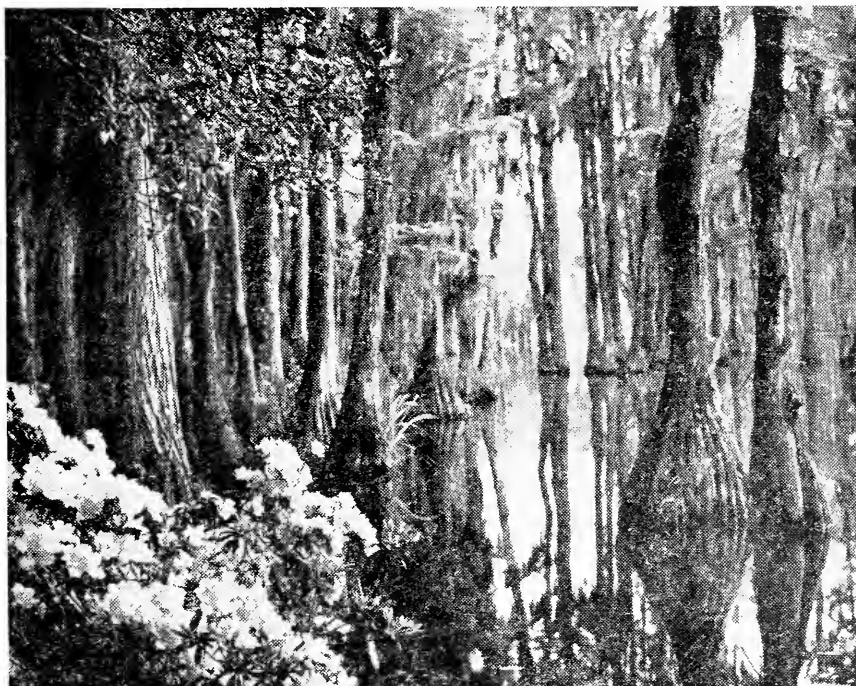
Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

FEBRUARY, 1950

No. 2

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The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils
 Appendicitis
 Cancer
 Constipation
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Epilepsy, Insanity, Feeble-mindedness, Mental Health and Habit Training.

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.
 Prenatal Letters (series of nine monthly letters).
 The Expectant Mother.
 Infant Care.
 The Prevention of Infantile Diarrhea.
 Breast Feeding.
 Table of Heights and Weights.

Baby's Daily Schedule.
 First Four Months.
 Five and Six Months.
 Seven and Eight Months.
 Nine Months to One Year.
 One to Two Years.
 Two to Six Years.
 Instructions for North Carolina Midwives.

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Health Bulletin

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

PRENATAL CARE

BY GRAYSON S. WALDROP, M. D.
Raleigh, N. C.

Prenatal care has been referred to as the watchdog of obstetrics. It is the inalienable right of every woman. Its conception belongs to America, and its growth and importance represent an achievement in the advancement of the art of obstetrics.

By common usage, the term "prenatal care" embodies more factors than the words imply (care before birth) and has come to include care before, during, and after delivery of the baby. This broad definition will not apply at present to the true definition, but will be restricted to care given prior to the onset of labor.

Prenatal care has its formal beginning with the first visit to the obstetrician which should take place as soon as pregnancy is presumed. At this time a complete medical history should be recorded, and a thorough physical examination made.

Along with the detailed pelvic examination, a careful estimation of the size, shape, and contour of the pelvic bones is made. If the examining fingers of the obstetrician reveal any suggestion of diminution of adequacy of the pelvic capacity, then measurements should be made from a special set of x-ray films which are taken two or three weeks before the expected date of delivery. These studies are interpreted by the obstetrician and radiologist. This pro-

cedure is called x-ray pelvimetry and does not allow a definite answer concerning the safety of vaginal delivery or the necessity of Caesarian Section operation in every questionable pelvis. It simply affords the physician more accurate information concerning the actual size and configuration of the bony pelvis than any other means at present. Facilities for taking pelvimetry x-ray plates are available in every sizeable community.

Laboratory tests afford valuable information. The serological test for syphilis should be performed in every case. This blood test is done to rule out syphilis. A positive report does not necessarily indicate the presence of syphilis. Once a diagnosis of syphilis is confirmed, treatment is started immediately to safeguard the pregnant woman and her unborn child.

Blood counts may reveal anemia or other abnormalities of the blood. Anemia is a condition in which there is a reduction in the number of red blood cells or in the amount of hemoglobin. Since a good supply of oxygen is necessary for a state of good health in the expectant mother and for maintenance of proper growth and development of the baby, the detection of anemia is important in pregnancy. If it is found to be present, appropriate treatment is available. The most effective measure

against the development of anemia lies in its prophylaxis, which is accomplished through proper dietary measures.

Rh factor determination is now of utmost importance in obstetrics as well as in general medical practice. This test is necessary to determine whether a substance known as the Rh factor is present or absent in the red blood cells of the patient. If present, the patient is called Rh positive, and, if absent, then she is Rh negative. Both conditions are inherited and cannot be changed. Eighty-five per cent of the people in the United States are Rh positive.

If an Rh negative woman is married to an Rh positive man, her children will quite likely have the Rh factor present in their blood and hence be Rh positive. In only a small percentage of such matings, after the first pregnancy (except for the Rh negative woman who has injudiciously received a transfusion of Rh positive blood) the blood of the unborn infant mixes with the mother's blood, and she develops substances in her blood which are antagonistic to the Rh factor of the baby's blood. These substances then pass from the maternal blood into the circulation of the unborn baby and tend to destroy its red blood cells. If the amount of these harmful substances is sufficient to cause extreme destruction of the baby's red blood cells, the child may die before birth or at birth, or shortly thereafter will show signs of anemia and liver damage. Damage sufficient to cause concern occurs only once in every 300 to 500 births. At present nothing can be done to prevent this formation of such harmful substances in the blood, but their presence can be determined before delivery and preparations made for the treatment of the child by replacement transfusion of blood when indicated.

The Rh factor assumes even greater importance relative to blood transfusions. An Rh positive woman can be given blood from a donor of the same type or group, who is Rh negative, with impunity. However, should the Rh negative woman receive Rh positive blood,

the chance of a marked and even fatal reaction to the transfusion is well within the realm of possibility. When, without prior Rh blood typing, an Rh negative woman receives Rh positive blood by transfusion, she might become "sensitized." If this "sensitized" woman bears in her womb a child who is Rh positive, a successful outcome of the present and future pregnancies remains doubtful.

Typing of the blood is essential, because during pregnancy immediate replacement of blood loss by transfusion, as a result of sudden and massive hemorrhage, occurs with much greater frequency than at almost any other time in a woman's life. The knowledge gained by typing and Rh factor determination will save valuable time in the necessary sequence of events preparatory to transfusion of blood.

In the average patient only two simple urine tests are essential. The early morning voided urine specimen is preferred. One test is for the detection of albumin which gives information concerning the function of the kidneys. The other indicates the presence or absence of sugar. A negative sugar test rules out the probability of the patient's having diabetes. A positive sugar test arouses suspicion of diabetes, and further investigation with blood sugar tests is necessary to confirm or deny such a diagnosis.

Not all doctors are in complete agreement concerning the necessity of routine x-ray examination of the chest of every pregnant woman. However, the incidence of positive findings should obviate any doubt of its value. Early active tuberculosis can seldom be detected by careful history and thorough physical examination of the chest, and the skin test for tuberculosis is notoriously unreliable as an index for the selection of cases to be x-rayed. In apparently normal pregnant women, routine x-ray examination will reveal active tuberculosis in one in every 50 cases.

How to keep well in pregnancy is a topic of importance. The tempo of general body activity as regards the

growth and normal destruction of tissues is increased during pregnancy. The food responsible for the rebuilding of these cells and tissues is protein. It has been shown, both by animal experimentation and from the results of studies in certain areas of Europe among children whose mothers during the German occupation were deprived of adequate amounts of the proper type of food, that an insufficient amount of protein would produce offspring of inferior quality. Dr. Tompkins of Philadelphia, by requiring a high intake of protein food in a large group of pregnant women, has markedly reduced the occurrence of one of the most alarming complications associated with child bearing, "toxemia of pregnancy."

The mention of diet in pregnancy is in no way to be confused with dieting. Dieting during pregnancy is unwarranted. Diet in pregnancy concerns itself with the regulation of the proper types of foods to be eaten, the eating of those foods with a high content of protein, and an adequate amount of all the necessary vitamins and minerals. The amount eaten may be left entirely to the discretion of a normal appetite. These foods are: red meat, liver, fowl, sea food, eggs, milk, cheese, both fresh and frozen fruits and vegetables (potatoes and beans excluded), and gelatin desserts. There should be a marked reduction of the fatty and starchy foods plus a limitation of salt both in the kitchen and on the table. The foods on the restricted list are: fried foods, pork, pastries, sweet desserts, ice cream, carbonated beverages, candies, and excessive quantities of bread and butter. Vitamins need not necessarily be given routinely to all pregnant women, but are used in treatment of known vitamin deficiency states.

Clothing should be light and comfortable. Common sense demands low heeled shoes with good and proper support. Circular garters should be discarded as they hinder the return venous flow of blood from the legs. The question of a corset or maternity girdle is quite individual and must be left to the

discretion of each patient and her physician.

The general conception among a number of patients that activity should be curtailed and no exercise permitted is erroneous. Exercise in moderation is an important routine in pregnancy hygiene and is necessary for the maintenance of good physical condition. No violent exercise should be allowed. Pleasant fatigue is an excellent limitation of any activity. Walking is a means of exercise available to all and should be brisk, covering a distance of one or two miles. As pregnancy advances, the walks can be shortened and divided into morning and evening periods.

Individual variations in the amount of sleep and rest required are great. As a general rule eight hours of sleep are necessary, and, should circumstances allow, an afternoon rest period is advisable. Chronic fatigue should be avoided through increased sleep and rest.

There is no conclusive evidence that smoking in moderation has any ill effect upon the pregnant mother as such or upon the child.

Excessive drinking of alcoholic beverages at any time during pregnancy should be condemned.

Sexual intercourse is allowed until six weeks prior to the expected date of confinement unless there is a history of repeated miscarriages. Such being the case, intercourse is usually prohibited.

The method and routine of bathing which existed prior to pregnancy may be continued throughout the duration of pregnancy except when specifically advised against by the physician.

The patient may drive an automobile until the eighth month of pregnancy. Automobile trips over good roads that consume several hours of traveling time are perfectly safe for the average patient. Travel even for short distances over rough and unpaved roads is potentially hazardous, particularly during the first months of pregnancy. Should the necessity arise for a long distance to be covered, travel by plane might be preferable. The commercial airlines

give every possible consideration to the pregnant woman if the knowledge of the patient's pregnancy is made known to them. An oxygen mask is available upon request when flying at high altitudes. The moderate or liberal use of oxygen in transit is to be recommended.

The prevalent opinion that pregnancy exerts a deleterious effect upon teeth is totally unfounded. Recent investigations would lead us to believe the effect, if any, is of a beneficial nature. Good care of the teeth and gums associated with prophylactic dental work should continue throughout pregnancy. No necessary dental work need be postponed except upon the advice of physician and dentist.

Enlargement of the breast occurs perceptibly at about the sixth week of pregnancy. Frequently some discomfort and increased sensitivity may accompany this change. To lessen any uncomfortable feeling and to reduce any sagging of the breasts, a snug, properly fitted brassiere of the uplift type should be worn from the beginning of pregnancy. If it makes her more comfortable, the patient may wear her brassiere during sleep.

Secretions of the breasts are often evident at times during pregnancy, and they are usually not significant. The clothing can be protected by simply placing a pledget of cotton between the nipple and brassiere.

During the last two months of pregnancy the nipples demand careful attention. They should be bathed daily with mild soap. Gentle massage, traction, and rotation, using vaseline or cocoa butter, help to acclimate them to the rough treatment to which they are subjected in the event the mother elects to nurse her child at the breast.

If the nipples are small and retracted, difficulty may be experienced later in nursing, even though the efforts of patient and doctor have been directed toward correction.

Many questions arise in the mind of the expectant housewife as to how she is to regulate her home duties and responsibilities and at the same time avoid fatigue. Although she is allowed

to carry out her normal household duties, tasks requiring a strain on her physical reserve can often be left undone, or, when necessary, the husband can lend a helping hand. A few dollars may be wisely spent in securing additional help. If the children in the home are properly managed and disciplined, an afternoon nap or rest usually can be obtained.

While it is undoubtedly best for the expectant mother to be relieved of all unnecessary fatigue and effort, it is permissible for her to continue employment providing the work does not require strenuous activity with too long hours. Employers usually give special consideration to the pregnant patient, and she may be transferred to a less difficult position.

Advice on various discomforts deserves mention. Sleepiness and lethargy are fairly common during the first few months of pregnancy, and rest is to be encouraged.

Frequency of urination is rather uncommon, but when it occurs it can be most distressing. It usually has no significance except when it persists over a period of some weeks. Infection of the urinary tract must be suspected in such cases.

Morning nausea and vomiting are rather common early in pregnancy and usually last only a short time. Occasionally they may persist throughout the pregnancy and may be experienced at some time of day other than the morning. Though the disorder is particularly worrisome at times, treatment is highly efficacious in reducing the severity.

Through the proper regulation of diet and bowel habits and the ingestion of adequate amounts of fluid, the use of laxatives during pregnancy (or at any other time for that matter) can largely be obviated.

Enlargement of the group of blood vessels at the lower end of the bowel or anus, "hemorrhoids," is common in the latter months of pregnancy due to pressure from increased size of the baby. Usually, simple medical treatment will relieve the resulting discomfort. Occasionally, because of severe pain,

their surgical removal during pregnancy is necessary. Generally, following delivery, no further trouble from hemorrhoids is encountered.

Almost every woman has some degree of backache during pregnancy. The severity of this condition as well as the duration of trouble varies considerably with each individual woman and also follows no consistent pattern in the successive pregnancies of any one woman. In the absence of any disease process or previous faulty posture its cause may be due to (1) the normal growth of the womb causing referred pain to the back, (2) softening and relaxation of ligaments allowing increased mobility of certain joints in the back, and (3) postural deformity from abnormal balance incurred as a result of the enlargement of the abdomen. The annoyance of this condition can usually be relieved by a properly fitted maternity girdle.

Abdominal discomfort is usually slight and results from the growth and pressure of the womb and/or the movements of the baby.

The activity of the secreting glands in the mouth of the womb increases during pregnancy, and, as a result, slight to moderate increase in the amount of mucous discharge is perfectly normal. Should this discharge become profuse, the cause should be searched for by the doctor, and appropriate measures taken to afford relief.

Good prenatal care has markedly reduced the occurrence and severity of the complications of pregnancy. Occasionally complications will develop in spite of the excellence of care by the physician and the conscientious cooperation of the patient. These complications are heralded by certain warning signals necessitating the immediate notification of the physician. Some of these signals are: swelling of the face or fingers, bleeding (irrespective of the amount lost or the stage of pregnancy), severe or continuous abdominal pain, recurrent headaches, "spots" before the eyes, chills and fever, diseases of an acute or infectious nature, marked diminution in the amount of urine passed, rupture of the bag of waters

prior to the onset of labor, or the feeling on the part of the patient that everything is not as it should be.

The purpose of subsequent visits is to maintain a careful watchfulness over the patient and the progress of pregnancy. These visits for the normal patient are made approximately every four weeks until the seventh month of pregnancy, and then every two weeks up to the beginning of the ninth month, at which time weekly or more frequent visits are required.

Certain routine procedures are carried out such as weighing the patient, taking the blood pressure, urine examinations, and securing information relative to any complaints. As the pregnancy advances, the abdomen is examined periodically to determine the position the baby has assumed, and the baby's heart is examined by listening for its beat.

A simple but detailed explanation of what happens during the course of events in labor is set forth. The various forms of pain relief that are available during labor are discussed. It is desirable for the patient to have her husband come in to make the acquaintance of the doctor in whose hands the safety of his wife and baby have been entrusted. Too often, the physician meets the husband for the first time when his duties following the consummation of delivery have been completed.

Through the companionship afforded by prenatal care arise bonds of true friendship between doctor and patient. Confidence of the patient in her physician is built around his ability, interest, and kindness. The long association experienced during the prenatal period offers the physician the opportunity of developing insight into her special problems, enabling him to know the patient as her real self, and to understand her desires as well as her needs.

According to the figures released by the U. S. Government Office of Vital Statistics, the risk of dying associated with childbirth has decreased during the past fifteen years from a loss of over six mothers for every thousand live births to approximately one per thous-

and living babies. Stated otherwise, each pregnant woman has five times greater probability of surviving pregnancy than her predecessor fifteen years ago.

The chance of obtaining a living baby which will survive the neonatal period has, in the corresponding fifteen years, shown improvement. From a loss of ninety-six (stillborn and infant deaths) per thousand live births, this figure has been reduced to fifty-three per thousand live births, or a reduction of about fifty-five per cent. More than any other single factor, prenatal care has been responsible for the marked decline in the maternal mortality and the great increase in the salvage of the unborn and the newborn infant.

The loss of mothers and babies in North Carolina when compared with the losses of the United States, and more particularly, other states of the South, leaves much to be desired. The record is a direct reflection on the inadequacy of prenatal care. The figures of large institutions reveal the fact that among patients admitted to the hospital during labor who have previously had no prenatal care there are five times the number of complications of pregnancy that there are among the group entering with a background of adequate prenatal care. Those factors largely responsible for the incompleteness of prenatal care in our state may be listed as follows:

1. Some rural areas, particularly in the southeastern and western parts of the state, are without adequate coverage by physicians. Also in these areas there are too few physicians and train-

ed personnel to set up and adequately maintain clinics for those unable to afford private care.

2. The income of our large colored population and the inadequate number of hospital beds for colored patients dictates care through some medium other than a private physician. This group is cared for largely by the services of inadequately trained, and occasionally unscrupulous midwives whose numbers in this state are said to exceed 2000. In 1947 these women, whose medical knowledge is more closely akin to witchcraft than medical art, were the sole attendants for more than 13,000 deliveries.

3. The failure on the part of expectant mothers to avail themselves of the services of a private physician or the facilities of a clinic when such are at their disposal.

4. The need for more hospitals and dispensaries in outlying districts equipped with facilities for handling deliveries and the complications arising from pregnancy.

5. The existing facilities in the various medical centers throughout the state are not utilized to their fullest extent.

Summary:

1. The significant features of good prenatal care are presented in brief form.

2. Prenatal care is essential in that it affords greater opportunity for the successful outcome of pregnancy.

3. In North Carolina we must realize the need for improvement in prenatal care and work toward overcoming its inadequacies.

HUMAN INFECTIONS DERIVED FROM BIRDS AND ANIMALS IN NORTH CAROLINA

By C. P. STEVICK, M. D., Director

Division of Epidemiology
North Carolina State Board of Health

In 1918 the North Carolina State Board of Health was given authority to require the reporting of certain dis-

eases in human beings.

There are forty diseases that were either made reportable in 1918 or have

been made reportable at some time since that date. Of this group of forty diseases, birds or animals are the only source for seven and are or have been an important source for two more. The seven are: anthrax, psittacosis, rabies, Rocky Mountain spotted fever, tularemia, typhus fever, and undulant fever. The two diseases partially attributable to animals are: encephalitis and tuberculosis. Of course, at this time in North Carolina animal tuberculosis is no longer an important source of human infection, thanks to the extremely effective control program carried out by the veterinary profession and the State Department of Agriculture. The incidence of these diseases in this state since 1918 is discussed in the following.

Anthrax

There have been four anthrax cases reported since reporting began. One occurred in 1931, two in 1934, and one in 1941. The circumstances surrounding these cases are not on record; however, it is believed that one or more occurred among veterinarians.

Encephalitis

Encephalitis has been reportable only since 1945. Since this term includes several types of infection, it is almost meaningless unless the specific diagnosis is stated. Unfortunately, the diagnosis of the encephalitides requires laboratory facilities that are not readily available and the reports received are not sufficiently specific to be of much epidemiological assistance. The reports received are of value, however, to detect sudden increase of encephalitis in any area and this information, coupled with that received by the office of Dr. H. J. Rollins, state veterinarian, is of definite value in maintaining a watch for equine encephalitis. Recent epidemiological evidence has been obtained by Hammon and his associates in California to the effect that chickens may constitute a reservoir of infection for St. Louis encephalitis. The part played by horses and other animals in regard to St. Louis encephalitis is not yet clear although the blood of certain

animals at times has been found to contain immune bodies.

In 1945 there were 5 cases of encephalitis reported, 3 in 1946, 5 in 1947, 6 in 1948, and 4 in 1949. We have not had sufficient resources to investigate these cases epidemiologically so we are unable to give you accurate information as to their type; however, we have assumed that very few, if any, of these cases up to now are equine encephalitis.

Psittacosis

Psittacosis has been a definite threat in North Carolina in past years although we have been fortunate and have had only one reported case. This occurred in 1946. For a good many years the United States Public Health Service, in cooperation with the states, has had a permit and notification system covering the shipment of psittacine birds between states. On receiving notice of shipment of birds into this state we would forward the notice to the local health department at the destination of the shipment. In 1945 this routine was followed in connection with a shipment of birds going to several North Carolina cities. The local health officers inspected the shipments on arrival and in two cities found one or more dead or sick birds. The living birds were chloroformed and sent to the National Institute of Health where they were found infected with psittacosis. Other birds shipped from this same source were located and destroyed in several other towns. Fortunately, no human cases occurred as a result. Recently, the U. S. Public Health Service has prohibited all interstate shipment of psittacine birds so that the problem will not be so difficult to handle. We do have one or more aviaries in business within our state, however, and since the disease is very difficult to keep out of an aviary, the hazard is by no means eliminated.

In addition to this experience, we have had one episode about two years ago of what appeared to be ornithosis arising from pigeons. This is a problem recognized in several areas of the

country, the disease having caused a number of deaths.

Rabies

Rabies constitutes a problem that is widespread and difficult. There were no human cases reported from the time reporting went into effect in 1918 until 1929. In that year two persons died. In 1930, two; 1933, one; 1935, four; 1936, three; 1937, two; 1939, one; 1940, one; 1942, two; 1944, one; 1945, one; and 1947, two. There have been no human cases in 1948 or in 1949, according to reports received through January, 1950. This is the longest period of time without a human case since 1930; that is, the years 1931 and 1932 brought no reports.

Animal reports as obtained from the State Laboratory of Hygiene (Table I) give a good idea of the extent of this problem in North Carolina.

1941 -----	825	1946 -----	798
1942 -----	530	1947 -----	846
1943 -----	561	1948 -----	771
1944 -----	753	1949 -----	868

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever was reported in North Carolina for the first time in 1932. Since that time there have been twenty to forty cases per year up to 1944 when a moderate increase occurred, to a total of 59 cases. There were 57 cases in 1945, 66 in 1946, 88 in 1947, 74 in 1948, and 82 in 1949.

Domestic animals are of some importance as a means of transmitting this disease by transporting infected ticks.

Tuberculosis

At the present time we are in the midst of a state-wide case-finding program for human tuberculosis and there has been a corresponding increase in

TABLE I
Animal Rabies Reported by the N. C. State Laboratory of Hygiene

Year	Total	Dogs	Cattle	Horses and Mules	Goats and Sheep	Swine	Cats	Fox	Misc.
1949	286	262	6	0	0	0	10	6	0
1948	335	316	4	0	0	0	13	2	0
1947	320	296	8	2	0	1	10	3	0
1946	295	276	4	0	0	0	13	2	0
1945	284	251	9	0	0	0	11	13	0
1944	308	283	9	0	1	1	12	2	0
1943	221	203	6	0	0	0	2	10	0
1942	189	169	4	1	0	0	13	2	0
1941	364	334	6	0	1	0	11	12	0
1940	335	289	8	2	0	1	17	18	0

Approximately ten states reported more animal cases than North Carolina in 1948 and 1946. In 1948 North Carolina ranked twelfth in population among the states so that it might be assumed that this problem exists in most states to about the same extent, depending chiefly upon the size of the state. The number of rabies treatments distributed by the State Laboratory of Hygiene for exposed human beings over a period of years as shown in table II.

TABLE II

Rabies Vaccines Distributed by the
N. C. State Laboratory of Hygiene

1940 -----	610	1945 -----	666
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reported cases. For this reason the death statistics are more useful than morbidity data to indicate the trend with respect to this disease. Complete North Carolina death statistics are available back as far as 1916. In that year there were 3,577 tuberculosis deaths. In 1948 there were 908. A significant factor underlying this extensive decline in North Carolina is the eradication of tuberculosis in cattle. It is conceivable that in the not too distant future the tuberculosis rate in human beings will be so low that any residual animal foci will be more important as a source of human infection than will

human cases themselves. In other words, it is increasingly important that the animal eradication job be completed throughout the nation if tuberculosis is to be completely wiped out.

Tularemia

Tularemia constitutes a troublesome disease problem in this state. The first cases were reported in 1929 and were four in number. Since that time cases have been reported in slowly increasing numbers each year as shown in table III.

TABLE III

N. C. Tularemia Cases Reported

1939-1940

1930----	7	1937----	13	1944----	10
1931----	3	1938----	26	1945----	27
1932----	10	1939----	26	1946----	45
1933----	28	1940----	12	1947----	74
1934----	14	1941----	22	1948----	42
1935----	15	1942----	13	1949----	53
1936----	10	1943----	14		

Again, we do not have epidemiological data regarding the exact source of infection for these cases. A recent study in Arkansas revealed that of 704 cases, 391 (or more than half) were tick-borne, 207 were from rabbits, and 30 others were from other sources, including squirrels or on cats recently in contact with the flesh of an infected rabbit. It is possible that the problem in this state is of a similar nature.

Typhus Fever

Typhus fever has been a problem in this state since about 1929 when three cases were reported. There have been localized outbreaks, together with scattered cases, continuously since that date. There was an irregular increase in the number of cases up to a total of 236 in 1944. Widespread rodent control and DDT dusting throughout the areas of highest incidence have apparently been responsible for a sizeable reduction in cases since that time to 29 in 1949. While direct infestation with fleas from rats is the most common method of human infection, some epidemiological evidence has indicated that infected

fleas transported by cats may have been a factor in a few cases.

Undulant Fever

Of the animal infections transmissible to man, undulant fever probably has the greatest public health importance in North Carolina at this time, not only because of the fairly large number of human infections reported over a period of years, but also because of the strategic position in which we find ourselves. Due to the increase in importation of cattle and swine, there is a definite danger of a continuing increase in animal and human cases at a time when, all other factors being equal, we might coordinate our forces and complete the eradication of the disease from the state, a job which has already advanced here a great deal further than in any other state.

This disease appears for the first time in the morbidity statistics for 1932 with a total of four cases. The reports for the remaining years are given in table IV.

TABLE IV

N. C. Undulant Fever Cases Reported

1933-1949

Year	Cases	Year	Cases	Year	Cases
1933----	15	1939----	25	1945----	15
1934----	19	1940----	11	1946----	9
1935----	31	1941----	12	1947----	21
1936----	23	1942----	9	1948----	15
1937----	26	1943----	7	1949----	31
1938----	29	1944----	14		

In the United States as a whole in the three-year period 1930-1932, there was an average of 1,488 human cases. Nine years later in the three-year period 1939-1941, there was an average of 3,403 cases, or an increase of 117 per cent in the morbidity rate. During this second three-year period the largest average number of cases occurred in Texas with 337, a rate of 5.3 cases per 100,000 population, and in California with 292, a rate of 4.2 cases per 100,000 population. The highest rates during this period occurred in Arizona, 6.0; Kansas 7.2, Oklahoma 8.6, and Wyoming 6.0. The North Carolina rate at that

time was 0.4 cases per 100,000 population. As low as this was, it nevertheless represented a 400 per cent increase over the three-year average nine years before. Oklahoma's average in 1930-1932 was seven cases and this figure increased to 200 in 1939-1941, or an increase of over 2700 per cent in the morbidity rate, a larger increase than any other state.

A later three-year average for the period 1946-1948 offers only slight encouragement. For the United States as a whole, there has been a 50 per cent increase in the rate of infection of human beings over the situation that existed seven years previously; that is, there were 5,573 human cases, on an average, for the years 1946, 1947, and 1948, as compared to 3,403 for the period 1939-1941.

North Carolina showed the same rate for the period 1946-1948 as in 1939-1941. This, of course, does not take into consideration the rather sharp increase that has just occurred in 1949.

In 1939-1941, seven states showed slight decreases in their undulant fever morbidity rates as compared to those of nine years previous. In 1946-1948, eleven states showed a decrease in the undulant fever morbidity rate and four more (including North Carolina) showed no increase.

For the period 1939-1941 the average annual undulant fever morbidity rate for North Carolina was exceeded by all the states but one, West Virginia, whose rate was identical with ours. For the period 1946-1948 no other state had as low an average rate. This is a record of which we can be very proud, but to preserve it will take a great deal of effort. We represent an island surrounded by brucellosis in every direction and the sharp increase that we had in human cases in 1949 may indicate the beginning penetration of our defenses.

Isolation of undulant fever organisms in the State Laboratory of Hygiene

totalled five in 1949. All were found to be *Brucella suis*.

The above completes the information derived from our official morbidity data; however, we are now aware of one other troublesome disease problem in the state for which we have begun to collect some limited information. The problem is that of human infection with the larvae of dog hookworm commonly spoken of in its human manifestation as "creeping eruption." The U. S. Public Health Service some time ago called our attention to the fact that large numbers of cases of this infection were being reported in Florida. Several months ago we contacted the health officers in the various counties of the state and learned that in at least two eastern counties large numbers of cases are occurring. Scattered cases have occurred in many parts of the state, especially in persons visiting the beaches. Specimens are being collected and forwarded to the U. S. Public Health Service from dogs in the infected areas, preparatory to developing some type of control program.

The past ten years have shown a great reduction in infantile diarrhea, typhoid fever, and paratyphoid fever. Cases of dysentery and enteritis that still persist are gradually being diagnosed more specifically and the public health problem is being more accurately outlined. In this steady advance in knowledge the animal sources of salmonella are being more clearly recognized as important sources of human infection. In the future we shall probably be hearing more about this problem. Salmonella infections are now known to be the etiological agent in many of the enteritis cases occurring in North Carolina. We still have inadequate data to designate the specific bird or animal strains that are of importance.

There are numerous other diseases of similar origin that are known to be of importance to humans, but they have either not yet become problems in this State or have not been recognized.

JUNIOR GUILD AIDS COMMUNITY IN WIDE PROGRAM OF VOLUNTEER SERVICE

BY FRANCES JOHNSTON LYON

Organized In 1937 Guild Has Pioneered In Many Projects

Reprinted from *The Sunday Telegram*, Rocky Mount, N. C.

Organized in the fall of 1937 the Junior Guild of Rocky Mount has grown from a group of 27 women to a membership of 193 of which 137 are active, the other 61 members being sustaining, non-residents and honorary and today is playing a vital role in community affairs.

Answering the need of assistance for local welfare agencies with its first project that of aid in a Well-Baby clinic at the City Health Department that made it possible for all classes to avail themselves of pre-natal care and information, and for every mother and every child to have the best possible care regardless of race or station, was the primary purpose of the organization in 1937. Today—approximately 500 infants and pre-school children attend the clinic annually receiving medical treatment, drugs, cod liver oil and milk supplied by the Guild.

Growth of Organization

With its growth in membership so also has come the growth of an almost unlimited amount of volunteer services time and money devoted unstintingly and unselfishly to not just one, but to many worth while projects of welfare in the community until the organization has created for itself a unique and almost indispensable position in the community.

Today, along with the Well-Baby clinic expanded to a great degree, there are the tubercular wards at the Nash and Edgecombe county homes to which members of the organization visit monthly taking gifts, food, useful articles and cheer climaxed with an annual Christmas party each year; the lending libraries in which twice weekly, members visit all patients in the city

hospitals distributing books and magazines from attractive push carts; donations and aid are continued the Girl Scout, the Scout summer camps; the North Carolina Symphony Orchestra; the Salvation Army and Dental clinic for underprivileged children, to mention a few of the agencies supported by the organization.

Something Of Its History

In 1943 the Service Men's organization of Rocky Mount opened a 10 room house on Church street with the Guild members as volunteers to staff and sponsor the operation of the Center with cooperation from Rocky Mount women. The Center was operated from June 1, 1943 until August 1945 with a Guild member on duty as hostess at all 12 hours daily.

The year 1946 brought forth a major project for the organization of women. A local chapter of the King's Daughters, national women's organization for humanitarian work, was organized and the Guild made an initial donation of \$5000.00 towards the purchase of the Home at 126 South Franklin street which will house 17 residents and a hostess. Since that time a grand piano, a bedroom furnished and monetary donations have been given periodically to the organization of which many Guild girls are charter members.

Cultural interests are not to be overlooked either in the Guild's program of activities. With the organization of a Community Radio Council in 1947 to further the interest of Rocky Mount on programs to interpret the community and arouse interests in community projects and to stimulate interests in educational programs through radio forums and children's programs,

a Town Hall was conducted at the Center Theatre weekly. The program, in charge of William Bobbitt of the Chamber of Commerce and Mrs. I. J. Dowdy, Jr. of the Guild executive secretary of the council, tied in with an educational program for school children. Too, the Guild has aided in producing two Children's Theatre productions, one in 1948 and the other in December 1949 in joint with the Little Theatre.

To date, we arrive at the latest major project of the organization and needless to say one of its most outstanding. As a result of determined efforts and work of this group of Rocky Mount women 108 local children now have a new and happier outlook on life than they had in September 1949. The children from pre-school through High School age are receiving training and instruction for speech defects such as articulation, lisping, cleft palates, delayed speech and hearing defects.

In the Spring of 1949 following a previous survey having been made to determine the need for a speech teacher for Rocky Mount children, with the discovery of about 150 in the immediate need, suffering with speech handicaps, the Guild voted to sponsor the promotion of such a program as its project and allocated \$3500.00 for the necessary expenses.

With the able guidance of D. S. Johnson, superintendent of the city schools, Cyrus Edson, principal of the High School and the Family Service Society, contacts were made and financial assistance was granted through the Department of Special Education of the State Board of Public Instruction and in September the Guild realized its project—"A Speech Therapist" for the children of our community. Miss Betty McClure of Shelby, North Carolina, was secured as the correctionist teacher and is now a member of the Public School faculty serving both white and colored children. Other than serving those children a clinic for pre-school children is held once per week.

The Guild had adopted this project as a permanent one and not only

financial assistance for the year of Miss McClure's salary supplement will be paid by the Guild, but all equipment and the setting up of an office for the teacher as well as such volunteer services as are needed, are and will be given by the members.

"What is done for the children attending the speech correctionist?" is a question no doubt asked by many and a natural one, too. These children are given individual therapy classes to rehabilitate sluggish muscles including exercises, drills and relaxation to correct the type of speech defect.

Guild Membership

Membership in the Guild is not a social acceptance, but is an invite to plenty of hard work. A pioneer in volunteer community work the program of the organization is a "down-to-earth" demonstration of what a group of girls can do when they roll up their sleeves and get down to hard work to help solve community problems.

To put it plain, with the many duties obvious from the above mentioned services rendered by the Guild volunteer work is almost an all-time job. Girls may, if they wish, give up active duty at the age of 40 and each year as needed according to the number having taken this classification, a group of girls are elected to take the place of the so-named group, so as to continue the organization's wide field of services, with never a lag. The new girls, called provisionals, until they have satisfactorily completed a six-month training course, make a concentrated study of the city—its government, social agencies, religious groups and educational opportunities climaxed with an examination. Then, they become full-fledged members with more and more responsibilities.

Placement of Volunteers

Placement of the volunteers is a job within itself as Mrs. O. E. Bell, placement chairman, can testify. Placement interviews, card files with records of hours and services with continual check are necessary to keep the or-

ganization's schedule in smooth running. Members are allowed to choose their own field of work because of interest, talent, special training or personal reasons. On the other hand they may be placed by the chairman where needed.

"Where does the money come from for the Guild's extensive aid in projects?" To realize how much is involved in planning projects and in distributing volunteer services the raising of money to pay the bills and make the donations supported each year, almost classifies the Guild as "a big business." And this is where our Thrift Shop comes to the front. With Mrs. L. I. Gravely, Jr. as ways and means chairman and Mrs. Lewis Scruggs, Thrift Shop chairman, there is a buzz-buzz of activity

and work, to put it mildly.

The Thrift Shop, accounts for quite a share of the year's income. A second-hand clothing shop and an all-time business of six days per week, requires unlimited time and work on the part of Mrs. Scruggs and her committee to staff the girls on regular working schedules. The ways and means committee, Mrs. Gravely chairman, has a real job on its hands. It takes ingenuity and hard work to raise money through such projects as fashion shows, antique shows and the like.

The objective of the Guild since its beginning and today is "To foster interest among its members in the social, economic and civic conditions of their community and to make efficient their volunteer service."

NOTES & COMMENT

By Acting Editor

OUR FRONT COVER—In 1920 one would need to be more than an optimist to consider Greenfield Lake anything but a nuisance—in fact the New Hanover County Mosquito Commission was spending several hundred dollars each year spraying oil upon the waters of this lake for the purpose of controlling mosquitoes. There was no road around the lake. The workmen who sprayed oil had to be transported in a boat. Some ten years later a road was built around the lake and the City of Wilmington acquired the lake and surrounding land as a park. A prominent physician played a very important part in the further development of this property into the beauty spot which it is today.

The following account in the Wilmington Star News tells something of the progress of the conversion of this former nuisance into a public park where thousands upon thousands of North Carolina citizens can see flowering plants, shrubs and trees without paying any admission fee.

"One spring day in 1934 a physician

and his wife were driving around a lake near Wilmington.

Bulbous-rooted cypress trees, festooned with moss, bordered the lake's edges which were alive with a multitude of gay flowers, contrasting vividly with the dark green background and sunlit waters.

On that day Dr. Houston Moore gave birth to an idea which since has made Greenfield Lake one of the five most beautiful spots in North Carolina and has brought national fame to Wilmington as an azalea center.

Thinking, "what a beautiful place that could be made," and thinking how other persons would enjoy a similar experience, Dr. Moore conceived the thought of further beautifying the lake and holding an Azalea festival.

Grown to an annual event and observed this year on March 30-April 2 the Wilmington Azalea festival will climax a season that will bring innumerable thousands of persons to view the over a million azaleas planted around Greenfield Lake's banks, Wilmington's streets and public buildings, in gardens

of its residents, and in the nearby Airlie gardens and Orton plantation.

Other persons circulating the lake during those early years may have had a thought similar to Dr. Moore's. But it was to Dr. Moore's credit that he took action.

Tirelessly, he made the rounds of civic and women's club meetings, presenting his idea. As a result, the Greenfield Drive association was formed.

Dr. Moore was elected to head it and held this position until his death. Each civic and other organization appointed one of its members as a representative to the association.

As chief spokesman, Dr. Moore energetically painted a picture to this group and others of a Greenfield Lake bordered with azaleas, dogwood, camellias, and wisteria. In its first year, the association raised \$2,500.

For almost the first time in its history, Wilmington had a project in which everybody could take part. The city and county governments appropriated \$500 for the services of a landscape architect and spent large sums to beautify and plant additional flowers around the lake.

The city council obtained a Works Progress administration project for the city. Labor supplied by these WPA funds helped to clear the underbrush which formed an impenetrable screen, hiding the lake from as much as 50 feet from the road.

Private residents contributed azalea, dogwood, and camellia plants.

Then the WPA expired. The city council turned down pleas for funds to finance the upkeep of the work done on the lake's perimeter.

But the spark of hope remained alive.

In 1937, with the help of several civic leaders, Dr. Moore persuaded the city council to agree to finance the maintenance of the work on the lake. A second drive for funds raised \$2,000 and work again started on Greenfield.

War interrupted only temporarily Dr. Moore's dreams of a fragrant, multi-colored plant paradise, shared by all.

Then in the summer of 1947, Dr. Moore again contacted various civic or-

ganizations and proposed the idea of an Azalea festival.

As a result, all interested community organizations held a meeting and endorsed tentative plans for a festival."

MISSOURI PROGRAM COMBATS BLINDING EYE INFECTION

A significant number of Missouri people owe their eyesight today to a small group of doctors and other health personnel who have undertaken to wipe out trachoma, an eye infection, in the state.

So successful has the Missouri program been that the percentage of cases of total blindness in the state caused by this disease has been reduced from 25 per cent prior to 1926 to about 12 per cent since 1935.

The story of how Missouri's trachoma service grew from a single railroad car to the present modern, 55-bed hospital at Rolla is told by Dr. Arthur A. Siniscal, medical director of the hospital, in *Archives of Ophthalmology*, published by the American Medical Association.

Commonly known as "granulated lids," trachoma causes more blindness than any other eye infection and probably is the most widespread, Dr. Siniscal said. The disease affects the membrane lining the eyelids, causing a roughened appearance, and is spread by personal contact, he explained.

The initial Missouri program was begun by the United States Public Health Service, according to Dr. Siniscal. In the early 20's, Dr. John McMullen of the Public Health Service began to concentrate the program on the Ozark region of southern Missouri. A mobile railroad car was supplied by the St. Louis-San Francisco Railroad Company to house and transport the equipment and personnel of the trachoma service.

The car ran over the regular company tracks and contacted many towns throughout the state. It contained a complete clinic for registering and examining patients and for treating them on the spot. In many cases the necessary operations were performed in an operating room in the car.

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CHAPEL HILL, N. C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

MARCH, 1950

No. 3

SCHOOL OF PHARMACY



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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Sanitary Privies
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The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	Baby's Daily Schedule.
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Breast Feeding.	Two to Six Years.
Table of Heights and Weights.	Instructions for North Carolina Midwives.

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Health Bulletin

PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. 65

MARCH, 1950

No. 3

J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

"THE RURAL HEALTH COUNCIL PROGRAM"

The North Carolina Rural Health Council program, started in the Fall of 1948, under the sponsorship of the Rural Health Committee of the North Carolina State Medical Society and the North Carolina Good Health Association, has now been underway fifteen months.

The health council program was designed deliberately to promote the interest and participation of rural citizens in working together through an organized council to find and solve local health problems. The initial plan was to offer assistance to two counties in the West and two counties in the East in organizing demonstration health council programs. It was hoped that some successful pattern could be gleaned from these four county organizations which would aid other counties in the state.

The joint committee succeeded in obtaining a grant from the General Education Board and employed a full-time Health Educator who could be loaned to counties for assistance in organizing councils.

After several years of state-wide publicity concerning North Carolina health problems, the Good Health Association felt that stimulation and clarification of local health interest was imperative. The medical profession members felt that the approach of the Rural Health Committee should be one of helping people to help themselves and that any real solution of rural health problems would come from autonomous community organizations or councils.

Alexander County

The first council was organized in Alexander County in October 1948, when seventy-five persons representing local organizations, met together to list major county health problems. This group adopted a few guiding principles, some orderly procedure, and went to work to help complete the twenty-bed hospital health department center. This council has continued to undertake various health projects such as "Health Career Day" in the schools, county-wide Blue Cross insurance campaign, completion of a health census, organization of a school health committee, and so on.

The Alexander County Health Council has concluded that their most important need is the promotion of increased citizen participation, community by community, throughout the county, and that basic health education programs will be necessary to this end. The greatest handicap to the Alexander Council has been the lack of professional assistance due to a rapid turnover of public health personnel during the past year.

Watauga County

The second health council was organized in Watauga County in May 1949, when elected Health Chairmen from thirty-six Watauga County communities met together to discuss problems in common. Urging a "grass roots" approach to council organization, members of the local medical society with the Health Educator in Watauga County, obtained the cooperation of the Farm

Bureau in the promotion of over forty citizens' mass meetings in the county. Physicians, the Home Agent, hospital directors, the Health Educator, Farm Bureau officers, and the FHA Supervisor attended these meetings to discuss community health problems with citizens. Many of these communities have "tackled" problems of swamp clearance, garbage disposal, stream pollution, health clinic attendance, unsanitary privies, unsanitary water supplies, nutrition and so on.

The Health Chairmen completed simple individual community surveys, published a booklet listing some of their problems and resources, and set up a speaker's and movie bureau. The Medical Society and Health Council ardently promoted the employment of a district Health Officer and with the fine assistance of the State Board of Health succeeded in fulfilling this resolution. The Watauga County Health Council has made a real beginning in stimulation of citizen interest and broader participation in health matters.

Caldwell County

Caldwell County was the third county to become interested in a health council and so actively requested the assistance of the "loan health educator" that the Rural Health Committee deferred assistance in eastern North Carolina.

Caldwell County decided on a much slower organization process than that undertaken in the other two counties. Three large citizens mass meetings, to which the presidents of one-hundred eighty-one county organizations were invited, did not bring out immediate need for a health council. Rather the idea of a "community council" was proposed as a possible solution to the need for coordination in all phases of community life—not just health phases.

In order to reach people in all sections of Caldwell County to find out their interests, a long-term democratic educational plan of approach was worked out by an elected Steering Committee and representatives of the medical society. The "loan health educator" stimulated programs in three of the twenty-one natural rural communities and as-

sisted a new PTA in one of these communities to survey problems neighborhood by neighborhood and to find out interest home by home.

On the unanimous recommendation of the Steering Committee the Caldwell County Board of Health members and County Commissioners, with the assistance of the State Board of Health, recently succeeded in employing a full-time Health Educator to implement this sound long range program.

* * *

During the fifteen months in which this health council program has been underway, the committee has constantly changed its ideas regarding organization and approach. The program has moved more slowly than was first anticipated and yet each county, taking its cue from the previously organized county, has brought about a sounder plan of organization and has literally been developed in a better "grass roots" fashion.

In the Fall of 1949, the General Education Board turned down a request for an additional year's grant, and due to a lack of funds in this year's Good Health Association budget, the North Carolina State Medical Society decided to assume full financial responsibility for the Rural Health Council program.

Members of the medical profession believe that this program is a demonstration that the people of North Carolina communities can solve their health problems themselves with adequate professional assistance which will not plan "for" people but "with" them. Such a demonstration is further proof of the adequacy of our free enterprise system of government.

The Rural Health Committee believes that every citizen in the community has a stake in the health of the community. It has found that each community as well as each county has different problems and different ways and means of solving their problems. There is no short cut to better health—it should be a democratic process. If rural citizens choose to remedy the health situation in their communities, then they must be given the opportunity to remedy it in their own way in their own time. Experience with three counties has

proven to the committee that the "grass roots" approach is the only lasting way to attack problems. They have found that there is no pattern other than the democratic process . . . unity not uniformity.

The Rural Health Committee is composed of four members:

- Dr. Frederick C. Hubbard, Chairman,
North Wilkesboro, N. C.
Dr. Charles I. Harris, Jr.

Williamston, N. C.

- Dr. Reece Berryhill
Chapel Hill, N. C.
Dr. W. P. Richardson
Chapel Hill, N. C.

Miss Charlotte Rickman, M.S.P.H., is Health Education Consultant to the Committee, and Mr. James T. Barnes, Executive Secretary, North Carolina State Medical Society, serves the committee in ex-officio capacity.

SAVING PREMATURE INFANTS

By GEORGE M. COOPER, M.D.

Director of Maternal and Child Health Services
North Carolina State Board of Health
Raleigh, North Carolina

For sometime the State Board of Health, the U. S. Children's Bureau and physicians interested in premature infants have realized that there are entirely too many deaths among premature infants in this State. In 1947 the rate was 30.5 births per 1000 population or a total of 112,877. This birth rate was only exceeded by seven other States in the Union. It follows that if we have a high birth rate there are going to be more premature infants and therefore more deaths. It is interesting to go back several years and look over our vital statistic charts to see just what progress has been made along medical lines in the causes of infant deaths. When I speak of infant deaths I mean those children who die under one year of age. The most common causes of death under one year of age are:

- (1) premature births which account for approximately 35% or $\frac{1}{2}$ of the deaths.
- (2) congenital malformations, that is a child born deformed in one part of his body or another, which account for around 15% of the deaths.
- (3) injury at birth, such as due to difficult delivery, which accounts for around 12% of the deaths.
- (4) respiratory diseases, such as pneumonia and influenza, used to ac-

count for around 20% of the deaths but this had dropped to around 10% of the deaths in the last year or so.

- (5) gastro-intestinal diseases, such as diarrhea, enteritis, also used to be a prominent cause but this has also been reduced in the last few years.

No. 1 Baby-Killer

All of the causes of infant deaths except premature births have been reduced in the last few years due to medical care, better weapons to fight infection, good prenatal care, and also to the fact that most mothers nowadays are delivered in hospitals. However, at the present time, as in the past, prematurity is our number one cause of infant deaths. If we ever expect to lower the infant death rate much more in this State, or in this Nation, then we must devise some special means to preserve the lives of prematurely born infants by giving them better care. The number of premature infant births might also be reduced by better prenatal care. If one was to look at the figures of neonatal deaths, that is deaths of infants under one month of age, one would find that 50% of the deaths were caused by prematurity. There are around 5000 to 6000 prematures born in this State

each year. In 1947 there were 1,364 deaths reported caused by prematurity. It is estimated that 40% to 50% of these premature deaths could have been prevented if adequate physical and professional care had been provided.

In a survey of the various North Carolina hospitals it was found that the majority of the hospitals were not equipped to take care of prematurely born infants. The mortality rate in some hospitals was as high as 50% to 60%. In this survey the need for nurses trained in premature care was evident. Too many of the prematurely born infants that could have been saved were not given the proper care during the first 48 hours of their lives as it was noted that 90% of the prematures who died did so within the first 48 hours. These might have been saved if they had had the proper care in time.

Prematurity Defined

Now with this statistical background let us discuss what a premature infant is, what its handicaps are, why it needs specialized care and what we can do to prevent the number of prematurely born infants. A premature infant may be defined as one weighing $5\frac{1}{2}$ lbs. or less at birth regardless of the period of gestation. This definition has been accepted by the American Academy of Pediatrics and by the U. S. Children's Bureau, as it is felt that many infants with this weight in order to survive must have better and more specialized care than one which is full term at birth. The handicaps of a premature infant are several and it follows that the smaller the premature the greater the handicaps. Some of the more common handicaps are as follows:

- (1) A premature infant has difficulty in maintaining body heat. The skin of a premature infant is very thin and it does not have the fat layer under the skin that a full term baby has which helps to insulate. In order for a premature to maintain its temperature at a healthy level it must be placed in a warm environment such as an incubator. The infant also needs a great deal of moisture in the

air to prevent the skin from drying out and the incubator provides this by a humidifying apparatus.

- (2) The second handicap is a premature's difficulty in breathing. Often the baby is so small and his muscle movements so weak that when he is born he cannot expand his lungs to the fullest and therefore cannot take in enough oxygen to supply his needs. If oxygen is available in the nursery and can be given in the warm, moist environment of the incubator in a few days or weeks he may be strong enough to dispense with the oxygen.
- (3) Some premature infants are so small that they cannot nurse and have to be fed with a medicine dropper or a stomach tube for several weeks.
- (4) Premature infants are so immature that they have much less resistance to infection than a full term baby and every precaution must be taken by people coming in contact with them in order to prevent them from getting an infection.

The prevention of premature births involves the detection and correction of abnormal conditions before and during pregnancy. Prenatal care by a physician should be given early in pregnancy and continued at regular intervals throughout pregnancy. The physician who is in attendance should give careful consideration to the mother's general health and he may be able to diagnose any abnormalities in the mother's condition and may also be able to undertake specific measures such as the treatment of diseases and disorders with the idea of bringing the pregnancy to term with the mother and the baby in the best possible condition. It is interesting to note that toxemia is one of the greatest causes of premature births and that this can often be treated by a physician and the birth of a premature prevented by letting the mother come to term. Serious illnesses other than toxemia, such as syphilis, heart disease and tuberculosis also cause premature births and these can also be treated. Another common cause of pre-

maturity is multiple pregnancy such as twins and triplets. If the physician knows about this condition in time often he can prolong the period of gestation by very careful prenatal care. When the mother goes into labor she can then have specialized nursing care available to take care of a possible premature baby.

Federal Funds Available

The U. S. Children's Bureau has made available funds to the North Carolina State Board of Health to establish a program for the care of prematurely born infants in this State. The purpose of this program is:

- (1) to set up premature infant centers in hospitals located in strategic areas of the State. These centers have specially trained nurses, physicians and equipment to take care of prematurely born infants.
- (2) funds are set aside to give financial aid to parents in the lower economic group so that they might keep their premature infants in the hospital until they are strong enough to go home.
- (3) to make provisions to get prematurely born babies who need specialized care into hospitals or hospital centers immediately after birth.
- (4) to educate Public Health Nurses who are interested and nurses in hospitals in the care of premature infants by giving them refresher courses and scholarships in premature care.

Minimum Standards Set

In the beginning of the North Carolina premature infant care program certain minimum standards were set by the State Board of Health and a committee of pediatricians, who advised on the premature infant care program. It was found that there were only two hospitals in the State that met the minimum standards. There are now four hospital centers in this State in operation which are approved by the premature infant care program. These are Duke and Watts in Durham, Baptist in Winston-Salem, Biltmore in Asheville.

There are three other hospitals which have units under construction or contemplate them in the very near future. These are Rex in Raleigh, James Walker in Wilmington, and Mercy Hospital in Charlotte. These centers are completely equipped to take care of prematurely born infants of all weights. They have graduate nurses and physicians who have had special training in premature care. They are equipped with oxygen outlets and incubators. Some are even air-conditioned. These centers, however, can only take care of about $\frac{1}{3}$ of the prematures born in this State which means that $\frac{2}{3}$ of the prematures born will have to be taken care of in local hospitals. We hope that in a few years we will have several more of these large premature centers in the State, but until that time we will have to reserve these large centers for the smallest of the premature babies. In order to improve the care of prematures who will be taken care of in local hospitals other than the centers the State Board of Health has set aside funds to aid ten hospitals a year, where there is a pediatrician in attendance by giving a scholarship to one of the graduate nurses in the local hospital for a period of specialized premature infant training and the State Board of Health will lend said hospital at least two Gordon-Armstrong incubators.

Opportunity For Nurses

Public Health Nurses in the State will be given the opportunity to take a two weeks refresher course in premature care at the center in Duke Hospital. Almost every county health department in this State has an aluminum premature carrier, which is equipped with hot water bottles and with oxygen. This carrier is used to transport premature infants to the nearest center or hospital equipped to take care of these prematures. Conferences have been held in most of the health departments and they are familiar with the program. In the last legislature a law was enacted requiring the reporting of all infants under 5½ lbs. to the local health department within 24 hours after birth. This enables the health department to

know of these premature babies and to offer the parents of the infant the services of the centers and local hospitals. The attending physician should notify the local health department of the birth of a premature infant. The health department then notifies the nearest premature center and the Public Health Nurse uses a carrier to transport the infant to the center or the hospital. The Public Health Nurse visits the infant after he returns from the hospital and aids the mother in helping to care for the infant. The State Board of Health will give financial assistance where needed to parents of infants who are in the State-sponsored center. To date the State premature infant care program has helped 523 premature infants and already there is statistical evidence that there has been a reduction in the premature mortality in this State. Previous to this program very few babies in the State under 3½ lbs. survived. One of the premature centers has recently had a 1 lb. 10 oz. baby and because of the very special care which was afforded this infant in the center the baby is now four months old and is doing fine after a stay in the hospital of 78 days.



Premature Twins of Mr. and Mrs. Nathaniel Macon Gardner of Littleton, North Carolina. At the time the picture was taken these twins were six months old. Nathaniel, Jr. weighed four lbs. two ounces at birth—his sister, Allene Patricia weighed three lbs. seven ounces. They received their early care at Duke Hospital.

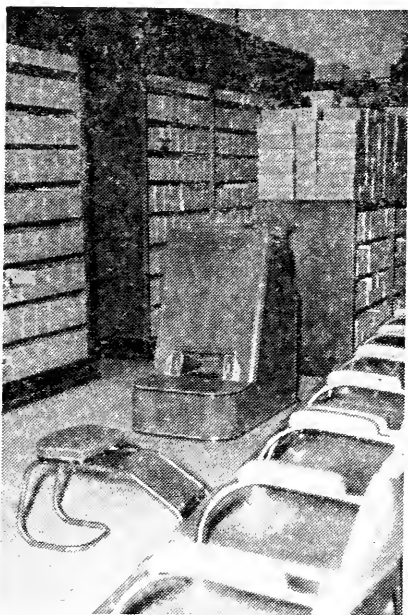
X-RAY SHOEFITTING MACHINES

By STEVE P. MARSH, JOHN C. LUMSDEN
and EMIL T. CHANLETT

Industrial Hygiene Section
State Board of Health, Raleigh, N. C.

Why have public interest, official concern and editorial appetite been aroused about shoe-fitting machines, an almost commonplace device in North Carolina retail shoe store and shoe departments? The answer is not to be found in the records of deaths, injuries or diseases in North Carolina or in any other state. Nor is it in the newest of this use of x-ray, as the projection of the human foot in a prospectively new shoe upon a fluoroscopic screen has been in the

shoe salesman's repertoire for more than ten years. The new interest and concern result from the ever widening dissemination of knowledge of the nature of radiation hazards (1,4) and from the availability of dependable, portable and economical radiation measuring instruments. (2) These are the fortuitous by-products of the atomic energy industry. Knowledge and instruments developed by that industry are proving useful in the lesser spectacular but equally dang-



View of X-Ray Shoe Fitting Machine showing improper location in store. Customers seated in chairs on the right and clerks fitting shoes would receive unnecessary exposure to X-Rays each time machine is used.

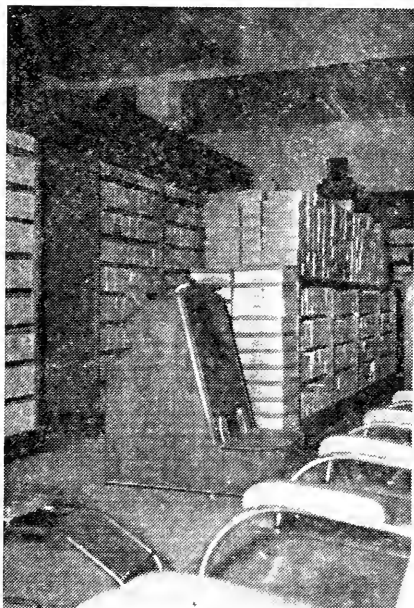
erous and insidious sources and applications of radiant energy.

It should be clearly understood by management, salesmen, and customers that the shoefitting machine uses an x-ray tube that is precisely the same in principle and construction as that used in the offices of physicians and dentists, and in hospitals. The tube in a shoefitting machine is sometimes more powerful than that used in certain medical and dental x-ray uses. It emits the same x-radiation that gives no clue of its existence by sight, sound, feel or odor, until revealed by a developed x-ray film or fluoroscopic screen. X-rays are dangerous. They give no prior warning. The first sign of excessive exposure either because of high intensities or because of frequent exposure is body tissue damage, and even this may go unnoticed. The body has great recuperative powers and in some instances with

time this damage is repaired. In other instances excessive x-radiation exposure has resulted in irrevocable injury. Effects are not necessarily immediate, and the gradual cumulative effects do result.

X-rays are capable of producing the same damaging effects on the body that have made the radioactive emanations from radium and atomic fission so respected and dreaded.⁽³⁾ Just as man can make fire a useful obedient servant as long as he is constantly watchful and careful, so he may use x-rays if equipped with the necessary knowledge. Just as carelessness makes man the victim of fire, so abuse and horseplay with x-ray makes him an even more pathetic and helpless victim.

As rapidly as reliable information and dependable instruments became available the North Carolina Hygiene Section prepared to meet radiation problems in industry. The new knowledge



View of Shoe Fitting Machine in proper position. High intensity beam of X-Rays from foot opening is directed away from the working area. Scatter radiation is absorbed by the wall of the store.

was acquired by attendance at national industrial hygiene conferences, staff study of published literature, consultant visits from the U. S. Public Health Service and the completion of an intensive course of instruction by the chief of the industrial hygiene engineering services. At first, rough indices were used to detect x-ray hazards. Ordinary photographic film and dental x-ray film gave qualitative indications. The first instruments were borrowed from the U. S. Public Health Service and the Department of Physics of the University of North Carolina. Subsequently the best available single measuring device for serving our field needs was purchased.

The field studies on x-ray shoefitting machines was begun in July 1949. Since then 115 establishments have received the services of 125 visits. These services continue and will be extended across the length and breadth of the state. Brief and practical information has been prepared and distributed to the store managers and their salesmen.⁽⁶⁾ Assistance has been given in the proper adjustment and maintenance of shoefitting machines. To study these devices carefully, one unit was brought to the laboratory in Raleigh. Precise measurements were made under a variety of operating conditions, and the particular machine made much safer for use by the expenditure of about four dollars worth of sheet lead to shield against x-ray leakage.

Improper use of x-ray shoefitting machines involved two groups, the salesmen and the customers. The Industrial Hygiene Section has the responsibility for the protection of all occupational groups against disease effects resulting from their employment. In this instance the source of the hazard also affects the patrons served, and without their understanding and cooperation the safe use of shoefitting machines cannot be realized. Too often there has not been a clear understanding of the purpose of these machines either on the part of the customer or the salesmen. This fact has resulted in frequent, repeated exposure for dangerously long total exposure time for the customer, the salesman operator, and fellow salesmen with-

in range of the stray and bounce radiation.

X-ray shoefitting machines should be used only for the final fitting for the benefit of the salesman when he feels there is some doubt as to the fit of the fleshy parts of the foot in the new shoe. Competent salesmen have repeatedly stated that shoefitting machines are necessary aids only in occasional cases of doubt. His skills of direct foot measurement and shoe sizing, touch, feel and observation are reliable in the vast majority of fittings. Physicians and dentists use x-ray as additional information in establishing a diagnosis, and the customer must recognize the similarity of the position of the shoe salesman. No physician yields to requests of the patient to have another exposure or another look to count ribs or see how a watch chain dangles.

Mr. and Mrs. Customer, do not ask your shoe salesman to press the button again so Jimmy can see his toes wiggle, or Janie can count the nails in her old shoe. You would not ask your physician for another fluoroscopic examination to amuse yourself or some other member of the family. Mr. Salesman, stand for the dignity of your occupation and for a respect for your tools. No carpenter runs his power saw to amuse his customers, no welder in an automobile body shop arcs his welding rod to delight the kiddies. X-ray shoefitting machines are useful tools for competent shoe fitters, but dangerous playthings.

The proprietors and managers of North Carolina retail shoe shops have welcomed the assistance of the Industrial Hygiene Section. Modifications have been made. Sales staff have been instructed by managers in accord with material prepared by the Industrial Hygiene Section.⁽⁶⁾ Placards have been distributed for attachment to machines which briefly advise the customer on how to protect himself against dangerous use of shoefitting machines. The staff of the Industrial Hygiene Section is continuing its observations and consultations, and plans to improve and extend its services. Although this application of x-ray has all the unfeeling and unseeable hazards of high energy



Industrial Hygienist Measuring scatter radiation from X-Ray Shoe Fitting Machine with Beta-Gamma Survey Meter.

radiation, shoefitting can be installed, maintained and operated safely.⁽⁵⁾ To realize their benefits requires rigorous adherence to good practices by proprietors, salesmen, and customers.

1. Andrews, H. L. "Radiation Hazards and Industrial Hygiene," *Industrial Hygiene Newsletter*, Vol. 9, No. 7, p. 4 (July 1949).

2. Holaday, D. A. "Radiation Measuring Instruments: Their Selection and Use," *Industrial Hygiene Newsletter*, Vol. 8, No. 10, p. 3 (August 1948).

3. Lapp, R. E. and Andrews, H. L. "Nuclear Radiation Hazards," PP 444-448. Prentice Hall, Inc., New York, 1948.

4. Williams, C. R. "Radiation Hazards in Industry," *Journal of Industrial Hygiene and Toxicology*, Vol. 30, p. 294. 1948.

5. —, "Cleveland Industrial Hygienists Inspect X-ray Shoe-fitting Machines," *Industrial Hygiene Newsletter*, Vol. 10, No. 3, p. 3, (March 1950).

6. —, "X-ray Shoefitting Machines." Mimeograph circular of Division of Industrial Hygiene, N. C. State Board of Health. Available on request.

* * *

X-RAY SHOE FITTING MACHINES

Preliminary studies of the use, loca-

tion and construction of 15 shoe fitting machines in Durham, Raleigh, Wilson and Rocky Mount have shown the need for information on these devices. All persons using, working near or served by shoe fitting machines must realize that it is an x-ray machine comparable to those used by physicians and dentists. Shoe fitting machines are dangerous and must be used with the same knowledgeable skill as x-ray and fluoroscope machines in hospitals or irreparable, permanent bodily injury can result without forewarning by minor pains. The danger depends on the distance from the x-ray tube, the barriers between it and the exposed person, the time it is on, the strength of the current generating the x-rays. The tubes in shoe fitting machines are powerful and are emitting radiant energy of the same physical characteristics as from radium and atomic fissions. To protect salesmen and customers, follow these recommendations:

For the Machine

1. Locate it with the foot opening towards a wall in the direction of an unused, unoccupied area. The strongest escape of rays is through the foot open-

ing, which are dangerously intense at distances up to 30 feet.

2. If the machine has a variable transformer and current meter, turn the transformer regulator to lowest position. Currents of 3.5 milliamperes produce clear images on well adjusted machines with good screens.

3. Reduce the exposure time to 5 seconds.

4. If the machine has an aluminum scuff pad in the foot opening, when it is worn or perforated, replace it with a new one 1 millimeter thick. It is an important protective filter to keep certain x-rays from the customer's foot.

For the Salesmen

The risk is greater than for any single customer, as salesmen are more frequently exposed and more often in the vicinity of the machine.

1. Stand in the operator's position before the control panel. It is the most protected area.

2. Never have hands on children's feet to position them while the x-ray tube is on. This places bare skin in the path of the highest beam intensities.

3. After the machine is properly located, stand away from the foot opening side.

4. Avoid working in an area within ten feet of the operator's side of the machine while the machine is in use. This minimizes the dose of stray radiation.

For the Customer

The danger is from repeated exposures in a single day. The primary beam passing through the customer's feet has intensities that can readily injure the body tissue if exposures are long and repeated.

1. Have shoes on both feet. Never expose bare or stockinged feet.

2. Do not use the machine for amusement or horseplay.

3. Before the x-ray is turned on, explain to the observer what to look for. With such explanation, five seconds of exposure is enough to see if the shoe fits.

4. Use the x-ray machine for final fitting only. For this purpose one or two exposures of 5 seconds each will be enough for each customer.

Study of these machines is continuing and further detailed information will be available. Certain older models appear to need improved shielding of the x-ray tube. Most machines are at present adjusted to exposure times longer than needed and current strengths higher than necessary.

The Division welcomes inquiries from proprietors considering purchase of new shoe fitting machines and questions on existing installation. With proper handling, x-ray machines can be used safely to fit shoes correctly.

Division of Industrial Hygiene
N. C. State Board of Health
Raleigh, North Carolina

CUSTOMER PRECAUTIONS

1. Do not insist on long or repeated exposures.

2. Do not exceed 2 X-Ray exposures for each shoe fitting.

3. Children should not be allowed to tamper with machine.

4. Never expose bare or stockinged feet to x-ray.

5. Follow instructions of operator.

Division of Industrial Hygiene
N. C. State Board of Health

PUBLIC HEALTH STREAMLINES FOR SERVICE

By WILLIAM H. RICHARDSON

State Board of Health, Raleigh, N. C.

In the 70's, Dr. Thomas Fanning Wood, of Wilmington, caught a vision of the possibilities of the Public Health

work in North Carolina. "How fully he grasped the far-reaching consequences of his idea and how clearly he saw the

ever-growing hosts of lives saved as a result of his vision and inspiration, we shall never know." Thus, Dr. George M. Cooper, Assistant State Health Officer, opens his chronological account of the Public Health movement in this State, which appears in one of the Board of Health's official publications. He points out that "we do know that the vision never left Dr. Wood, and that, under its sway, he worked through the Medical Journal, of which he was editor, and through the North Carolina Medical Society, until his influence reached the people in their General Assembly of 1877. On February 12 of that year, the North Carolina State Board of Health was born, through an act of the Legislature. This was the 12th State Board of Health to be established in the United States."

Since its creation in 1877, with an annual appropriation of \$100, the State Health Department has undergone various reorganizations, to meet the needs of changing times. Some of these reorganizations have been far-reaching in effect; others have been more simple. The latest of these occurred when the State Board of Health met in Raleigh recently and gave its unanimous approval to a reorganization plan submitted by a committee of which Dr. J. W. R. Norton, State Health Officer, was Chairman. Prior to that time, several organization charts were studied with a view to selecting that which appeared best for the present time.

The plan adopted does not replace any personnel. It was in no sense a "shake-up." It simply regroups existing units with regard to their relation to each other. Nothing was abolished. This streamlining of the State Health Department reduces the number of major divisions from 14 to 7. The new divisions are, together with their directors:

Personal Health, in charge of Dr. George M. Cooper, Director. Under Personal Health will be maternal and child health activities, services to crippled children, nutrition, cancer and heart diseases.

The Local Units Division, of which Dr. C. C. Applewhite is the Director, will concern itself with joint planning, con-

sultation, health nursing, health education, mental hygiene and school health.

The Division of Epidemiology is directed by Dr. Charles P. Stevick, formerly Director of both this Division and the Vital Statistics Bureau. The new Epidemiology Division also gives an example of regrouping certain work in the department. It will concern itself with Public Health statistics, including reports of births, deaths, and communicable diseases, immunization, venereal disease control, tuberculosis control, industrial hygiene, and accident prevention.

Mr. J. M. Jarrett continues as Director of the Sanitation Division, in which there is very little change, except that insect and rodent control activities have now been placed in this Division. Other activities in the Sanitation Division include environmental sanitation, inspection of public eating places, milk sanitation, stream pollution, shell fish and bedding inspection.

The State Laboratory of Hygiene remains as it was, under the direction of Dr. John H. Hamilton. It is concerned with biologics, microscopy, cultures, serology, water analyses, chemistry, and approved laboratories throughout the State.

The Oral Hygiene Division, of which Dr. Ernest A. Branch, Dentist, is Director, will continue its activities in mouth health, affecting the school children of the State.

The head of the State Public Health Department is, of course, the State Health Officer, Dr. J. W. R. Norton. The functions of the Division of Central Administration remain practically as they were before reorganization. In this Division we find Public Relations, Budgets, Personnel, Printing, Mailing and Central Files.

Two significant additions are to be made to the working units in the State Health Department. One will make a special study of diseases of the heart, from a preventive medicine standpoint, and the other will study ways and means of educating the people in the matter of accident prevention. At the last meeting of the American Public Health Association in New York, there

were extensive discussions of accident prevention, it being acknowledged that this subject now constitutes a Public Health problem.

The Board of Health also heard a discussion by Dr. Norton on the present trend toward grouping various diseases for detection, in clinics; that is examining for numerous ailments, rather than for just one, like cancer or tuberculosis, for example.

The Board voted to amend its policy on placing sodium fluoride in public drinking supplies, by advocating stricter supervision and stricter precautionary measures, sodium fluoride being dangerous in excessive quantities. Dr. Ernest A. Branch, head of the State Board of Health's Dental Program, favored this change. He pointed out the fact that, in some North Carolina areas, there is even too much sodium fluoride in natural water supplies; also, that, when this is the case, some people living in such areas are found to have mottled teeth. He told the Board that too much of this material can be worse than none. The State Board of Health has never given its official endorsement to any sodium fluoride program for water supplies, but, rather, is making a study of results that are reported.

The Board considered various routine matters, on some of which no definite conclusions were reached. During the meeting, there was considerable discussion of stream pollution, Mr. Jarrett, head of the Sanitary Engineering Division, pointing out that water supplies are being seriously menaced in North Carolina, as well as in other sections, in that our streams are becoming polluted, more and more, with human and industrial waste material. In some cases, he said, it is impossible for a City to tap an adequate water supply because of this condition.

The Board voted unanimously to issue an order, requiring the Town of Brevard to proceed with the installa-

tion of an adequate sewerage system and sewage treatment plant. It was ordered that plans for this work be drawn up and submitted to the State Board of Health immediately.

The recent Board meeting was presided over by Dr. Grady G. Dixon, of Ayden, President. Other members present were: Mrs. J. B. Hunt, of Lucama, who was appointed by Governor Scott to represent the dairy industry; Mr. Jasper C. Jackson, of Lumberton, the druggist member of the Board; and Drs. Hubert B. Haywood, of Raleigh; Ben J. Lawrence, of Raleigh; John R. Bender, of Winston-Salem; and H. Lee Large, of Rocky Mount. Dr. John LaBruce Ward of Asheville, also a member of the Board, was reported unable to attend, because of illness.

Thus, we come to another milestone in the organization of Public Health facilities in North Carolina. Fragmentary references to the above appeared in some of the State newspapers; however, it is realized that there are so many things to go into the average daily newspaper that it cannot devote sufficient space to inform the people fully on all public matters.

The more important things of life often are the least spectacular, including Public Health. It is so commonplace that it cannot be glamorized; furthermore, any attempt to glamorize it would place it in the category with many things which, even though they are associated with ballyhoo, lose their effervescence when exposed to the air.

No, we are not going to attempt to glamorize Public Health, but we are going to continually plug away, in an earnest effort to bring its benefits to your attention, in every possible way, and to emphasize that these benefits are offered without money and without price—and, above all, without any restrictions, save those measured in terms of human needs.

NEW WATER PURIFICATION PLANT CONCORD, NORTH CAROLINA

The picture on the cover of this issue shows the front of the new water filtra-

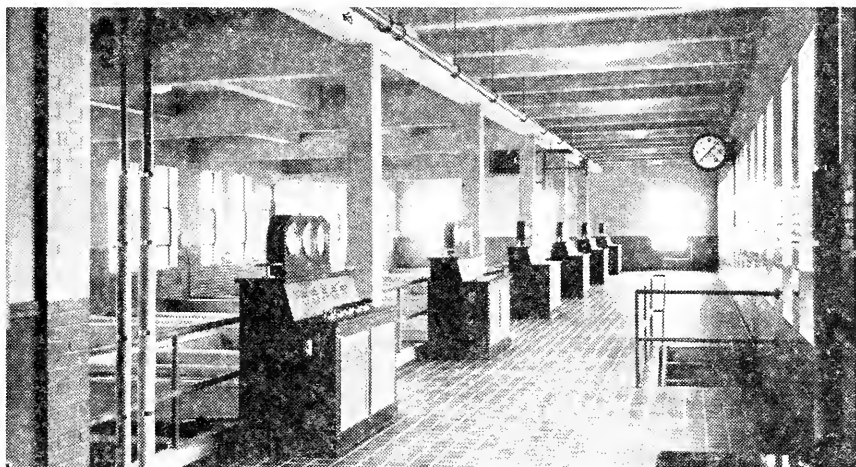
tion plant recently completed and placed in operation by the City of Concord.

This plant designed by Gilbert C. White & Co., Consulting Engineers, has a rated capacity of 6.0 mgd and is modern in every respect. The total cost of the plant and other waterworks' improvements including a 100,000 gallon wash-water tank, a 1,000,000 gallon finished water reservoir, and the necessary supply line to connect the plant to the water distribution system was \$775,000.00.

The new filtration plant will replace an old plant which has become obsolete with age and was inadequate to con-

tinue meeting the needs of the community.

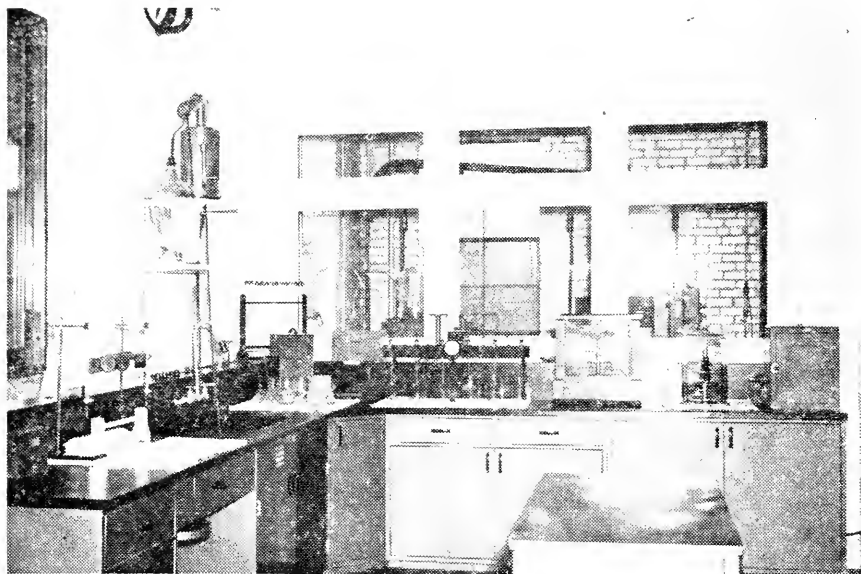
The other pictures occurring in this issue show some of the interesting features of the Concord plant. We are sure that most people seeing these pictures will agree that Concord has a modern water filtration plant of which they should and can justifiably be proud. The new plant will assure the citizens of Concord of a safe and adequate public water supply for many years in the future.



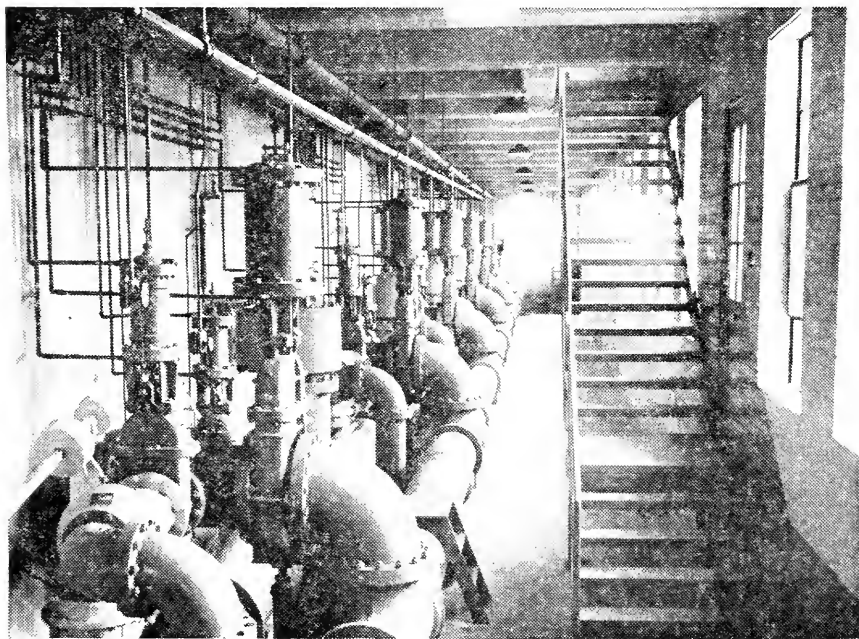
Filter operating equipment, filters and operating floor at the new Concord water plant.



Mixing and sedimentation basins at the new Concord water plant.



Modern water testing laboratory, new water plant, Concord, North Carolina.



Pipe gallery, new water plant, Concord, North Carolina.

W. D. MOULT, LIBRARIAN
SCHOOL OF PHARMACY, U. N. C.
CHAPEL HILL, N. C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

APRIL, 1950

No. 4



Margaret Elizabeth Smith, daughter of Mr. and Mrs. R. W. Smith,
Wilmington, N. C.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly **THE HEALTH BULLETIN**, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	German Measles	Sanitary Privies
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	Baby's Daily Schedule.
Prenatal Letters (series of nine monthly letters).	First Four Months.
The Expectant Mother.	Five and Six Months.
Infant Care.	Seven and Eight Months.
The Prevention of Infantile Diarrhea.	Nine Months to One Year.
Breast Feeding.	One to Two Years.
Table of Heights and Weights.	Two to Six Years.
	Instructions for North Carolina Midwives.

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

DEATHS—NATURAL AND PREVENTABLE

By WILLIAM H. RICHARDSON

State Board of Health, Raleigh, N. C.

Down through the ages, men have sought to appease death, by referring to it in flattering terms. A glance through the index of a well-known book of familiar quotations discloses that death has been poetically referred to as "eloquent, just and mighty," "an angel with two faces." Some poets, however, have not been quite so flattering.

After all is said and done, death is such an enemy that humanity has waged a continuing battle against it. While its grip will never be broken, it has been pushed much farther against the ropes than it was a century ago. It is so unwelcome to the human race that, in addition to using every weapon against it, we continue to keep a strict account of its victims, month by month, and year by year. We call this bookkeeping of life and death vital statistics, which constitute one of the responsibilities of the State Health Department in North Carolina. In the Vital Statistics Section, every death that occurs is recorded, as well as every birth. A rising death rate is all the more deplorable when there is declining birth rate. On the other hand, a stationary or even a declining, birth rate is not so ominous, if accompanied by a death rate showing a sharp decline.

It is also an unhealthy sign when increases occur in deaths from preventable diseases or conditions. It is bad enough when men, women and children die of causes that **cannot** be prevented, but when they are **allowed** to die, that is al-

together a different matter, and it indicates a neglect of duty somewhere along the line.

The Vital Statistics Section of the State Board of Health has issued its provisional report on deaths from various causes in North Carolina during the year 1949. The report also lists the total number of births. Comparative figures on both deaths and births are also given, that is, between 1948 and 1949.

Live Births 109,071

During the calendar year of 1949, 109,071 live babies were born in North Carolina; and, in addition to these, there were 2,800 still births. During 1948, the total number of live births was 111,963, while still births that year numbered 2,730. Last year, there were 2,892 fewer live births in North Carolina than during the previous year, but 70 more still births. It is also significant that, during 1949, deaths among babies under a year old totaled 4,151 as compared with 3,887 in 1948.

One of the most gratifying items in the 1949 provisional report is the sharp decrease revealed in the number of deaths from prematurity. The total for 1949 was only 938, compared with 1,302 in 1948. We will not go into a lengthy discussion of this, as the question was dealt with when information on the State Board of Health's program, designed to reduce the number of deaths among babies born prematurely was released. It would appear that the ef-

forts which are being exerted already are bearing fruit. Further reductions in deaths from prematurity are anticipated when the program reaches its anticipated maximum efficiency.

Four Master Killers

Turning now to deaths from other and all causes, the record shows that during 1949 a total of 31,422 persons among all age groups died in North Carolina. Of this number, a staggering total of fifty-seven per cent resulted from just four causes—deaths of the heart, 8,768; apoplexy, 3,764; cancer, 3,040; Bright's disease, 2,201. Thus, these four human ailments claimed 17,773 victims in our State last year, which was 721 more than died from these causes in 1948. Deaths from heart diseases alone were responsible for twenty-eight per cent of deaths from all causes last year. Moreover, during a single period of one year, the number of deaths from heart disease increased more than 500; from apoplexy, more than 300; and from cancer, 142. But, there was a sustained downward trend in deaths from Bright's disease, which dropped more than 300. There was also a decline in deaths from diabetes.

The most serious epidemic that occurred during the year was the measles outbreak, which resulted in 86 deaths from that juvenile disease, as compared with only five during the preceding year. On the other hand, deaths from poliomyelitis totaled only 22 as compared with 139 during the epidemic year of 1948.

Compared with the hundreds which occurred several decades ago, there were only seven deaths from typhoid fever in North Carolina last year. This disease has been brought under almost complete control, but any relaxation of control methods undoubtedly would result in an increase in the incidence of typhoid fever and, consequently, in more deaths.

Last year's vital statistics report shows that deaths from automobile accidents, according to the method of computation used by the Vital Statistics Bureau, totaled 960, as compared with 825 the previous year. Accidents other than

those caused by gasoline machines claimed 1,308 victims in 1949 as compared with 1,455 in 1948.

Value of Vital Statistics

Vital statistics not only disclose the number of births and of deaths from various causes, but they also emphasize the progress that has been made in bringing certain diseases under control. For example, one of the most prevalent and fatal diseases ever known has been practically eliminated in most sections of the United States. Reference here is to smallpox, which was brought under control only when vaccination became compulsory.

This disease was among the first against which science discovered a successful immunizing agent. Vaccination has been successfully practiced for more than 150 years, but not universally.

If the keeping of vital statistics dated back to the discovery of small pox vaccination, we would have a clearer picture of the progress we have made. It is said that smallpox can be traced back for at least 3,000 years. Furthermore, that during the eighteenth century, it was responsible for the death of sixty million Europeans. The number may have exceeded this staggering figure, since we do not know by what method the estimate was made. Certainly, accurate vital statistics were not kept.

History tells us that, in 1665 what was known as the "great plague" was responsible for the death of 68,000 persons in London alone. We do not have plague in this country, but we have had the equivalent, in yellow fever and cholera. During the nineteenth century, these diseases were responsible for thousands of deaths throughout the nation; however, we do not know just how many, because we did not have an accurate system of vital statistics reporting. Yet, as late as 1944, a million Chinese are said to have died of famine and cholera in one province.

In history we find many references to epidemics and plagues that wiped out people by thousands, even millions. Perhaps, if the medical scientists of the past had been able to secure more in-

formation about these diseases and to keep track of their locations, they might have been able to do a little more about them—that is, toward bringing them under control.

Quarantine Ancient Protection

We do know, however, that the practice of quarantining people with loathsome diseases dates back far into the dim past. Lepers in Bible times, for example, were forced to keep at a safe distance from those who were uninfected and were required to cry "Unclean," at the approach of others. Many of these lepers were beggars, but those who saw fit to contribute to their necessities, pitched coins to them and did not have personal contact. One of the most striking miracles performed by Christ, during His earthly ministry, was the cleansing of ten lepers, and of these, only one had gratitude enough to go back and thank Him. This leads us to a very important question. Do all the people today appreciate and take full advantage of health opportunities which are afforded them? For many years, it was hard to convince people they should be vaccinated against small pox, and in many cases force was necessary. Fortunately, this is no longer the case. As a matter of fact, medical science has so won the confidence of the people that many even seem eager to try new drugs and treatments, sometimes before they have been thoroughly proved.

It is to be hoped that our vital statistics reports in the future will reflect vast decrease in the number of deaths from cancer, heart disease and other human afflictions which now so ruthlessly reap their toll of human life among us each year. Medicine—both curative and preventive—is now training its guns on what we know as the degenerative diseases of middle and late life with a view to bringing these under control, if possible.

Thousands of North Carolinians die every year, as a result of ignorance, carelessness, neglect and crime. Reference here is to those who plunge headlong into Eternity along our highways, often carrying innocent victims with

them; to those who are murdered and deprived of the lives that God has given them; to suicides who feel they can't face life; to parents who permit their children to die of diphtheria and other preventable juvenile ailments; and to those in all age groups who die as the result of any other preventable illness or condition.

In this general group last year, there were 1,011 deaths in North Carolina.

Accident Prevention Move

To the State Board of Health's newer activities, another shortly will be added; namely, a unit to make a special study of preventable accidents, with a view to helping to educate the people how these can be avoided. More accidents result from the misuse of motor-driven vehicles than from any other cause.

Drunken drivers kill more people along our highways every year than bandits and robbers. Careless drivers, even when not under the influence of liquor, fill many other graves with innocent victims. There is a class of drivers who seem to think that the highway laws were not meant for them—drivers who wilfully speed, who dart around city corners when the pedestrian has the green light, who disregard traffic signals, by sneaking past stop lights. All these constitute a continuing menace, not only to pedestrians, but to law-abiding drivers of other vehicles, as well.

In most every field of human endeavor, the applicant for a job must show that he is an honest man; that he is not given to the excessive use of alcohol, and that he has never been convicted of any offense in court, traffic violations excepted. Why should the wilful violator of laws designed to protect life and limb be excused, any more than one who has committed an assault with a gun? The enforcement of traffic laws is the one thing that brings on more talk and results in less real action than almost any obligation of a law-abiding citizen. Passing through a red light should, at least, be given as much attention as failure to put a nickel into a parking meter.

All violent deaths—that is, deaths

from unnatural causes—are not preventable, of course. Every year, throughout the country, many people are struck by lightning, perish in floods, are the victims of falling trees, and experience many other forms of deaths over which they have not the slightest control. Nevertheless, it is doubtful whether such deaths can begin to compare with those which **could** be prevented. People who die from causes over which they have no control are to be pitied.

On the Preventable Side

Reference was made earlier to the 3,011 people who died last year in North Carolina, either as a result of preventable accidents or other conditions which might have been avoided. Accidents from all causes took 2,268 lives in North Carolina, in 1949. Added to these, there were 297 deaths from suicide, 375 homicide victims, 35 who died of whooping cough, 29 who were allowed to die of diphtheria and seven who had fatal cases of typhoid fever, a disease now practically one hundred per cent preventable. Of the 2,268 deaths from all accidents, 960 were associated with motor vehicles, according to the State Board of Health's method of computation, while all other accidents resulted in 2,308 deaths.

In order to study some of the causes of accidental death not appearing by name in the monthly vital statistics report issued by the State Board of Health, let us go to 1948, the last year for which figures have been broken down for publication. During that year, all accidents resulted in 2,233 deaths. The chief killer in this field, of course, was the automobile. Motor accidents that year resulted in 796 deaths. The next largest number of deaths in any general group was made upon those who suffered fatal falls or were crushed to death. In this class were 352. A consideration of each individual death would reveal a wide range of details. No doubt we would find in this group of people women who fell while hanging curtains, or while on the way to the basement, to operate washing machines. The death of one of the most promi-

nent ministers who ever lived in Raleigh resulted from a fall from a pear tree. Some people fall from windows and are killed; some are crushed by trees and other heavy objects.

Accidents That Kill

During the year under survey, that is 1948, fires resulted in 127 deaths in North Carolina—not what are commonly known as “burns,” but fires that destroyed or damaged buildings. Individual burns cost the lives of 118 people in North Carolina that year. Included in this number were men, women and children. Some of the children were burned while playing too close to the fire. Others may have been burned while carelessly handling matches; some may have been burned because careless parents left them exposed to danger.

In another group we find 112 who died as a result of mechanical suffocation. In this group were children smothered by bed clothes, or by parents in whose beds they are sleeping. In fact, any death by suffocation including a dirt or sand cave-in, might be placed in this class.

Drowning resulted in eighteen deaths in North Carolina in 1948, while the accidental discharge of fire arms, or accidental shooting, claimed 93 victims. Deaths on the water, other than drowning, numbered 76. In this group persons falling from boats while fishing are included. Railway accidents were responsible for 64 deaths, and 50 persons died while engaged in work on farms and in forestry. Airplane accidents took the lives of 45; 36 died from acute poisoning by solids or liquids; 34 were accidentally electrocuted. This last figure does not include those killed by lightning.

We have given you an overall picture of accidental deaths in North Carolina during a single year. If you should take this list and give it close study, you would inevitably reach the conclusion that an overwhelming majority of these could have been prevented. In this connection, it is well to bring out one point—that is, that a death from carelessness does not involve criminal intent on the part of either the victim or the one who

caused his death. Carelessness may not be a mortal sin, but some forms of it closely resemble venial sin.

Crime and Errors

One who causes the death of another, either by exerting wilful force or in open violation of a law is, of course, a criminal and ought to be treated as such. We all make mistakes. To make a mistake is not a crime, but to fail to correct one certainly fails to bring credit. The program to educate the public in the matter of the prevention of accidents will be based on a close study of effects, with a view to finding and eliminating causes. Deaths from preventable accidents are just as much the responsibility of Public Health as deaths from preventable diseases. The former involves chiefly a moral mental attitude, while the latter often involves simply the mechanical process of administering an immunizing agent. We will never solve the problem posed by preventable accidents by law alone, nor will we solve

it by abuse. In order to educate the public in the matter of accident prevention, we must appeal to its sober judgement and must point out the gravity of the damage that is being done by those who are either ignorant, careless, or wilful, as the case may be. We know that highway laws, within themselves, cannot prevent fatal automobile accidents. Without any intention of minimizing the importance of safety legislation, we must admit that with the increase of safety legislation also has come a tremendous increase in the number of automobile fatalities, as paradoxical as this may seem. It does not make sense and yet it is true. Therefore, another approach must be taken—by the way of education and an appeal to the public, not only to obey laws, but to exercise mutual respect. Whether we like it or not, we are our "brother's keeper," and we can't escape the responsibilities we owe our fellowmen. God made it that way, and we can't change it.

FRED TEMPLE

By WILLIAM H. RICHARDSON
State Board of Health, Raleigh, N. C.

A member of the class of 1909 at the University of North Carolina, Frederick Winfield Temple quit a year before graduation and worked as a farmer and general store clerk at his home in Lee County, near Sanford, where he was born. He is now Principal Bacteriologist in charge of Wassermann tests at the State Laboratory of Hygiene and, in point of service, the oldest employe of the North Carolina State Board of Health, with which he became associated nearly forty years ago. He has achieved, by the long method of actual experience, qualifications which now could be secured only in one of our institutions of higher learning.

The route over which Mr. Temple has come to his present status with the State Board of Health was not anticipated by him when he came to Raleigh in April, 1910. His purpose was to take a business

course, which he did. He learned shorthand and typing and qualified as a stenographer. He put the knowledge which he had gained in business school to practical use when he accepted a job as Secretary and General Assistant in the old State Laboratory of Hygiene, then located over the present site of the W. T. Grant Company's store on Fayetteville Street.

The State Health Officer at that time was Dr. Waston S. Rankin, and the Laboratory was in charge of the late Dr. Clarence A. Shore, its first director. As a matter of fact, there have been only two such officers since the laboratory began operation—Dr. Shore and Dr. John H. Hamilton, incumbent. There are several old newspaper men in Raleigh at the present time, including the writer, Tom Bost, and Edgar Womble, who remember the old laboratory and

how it stunk from mad dog brains, hook worm specimens, and other malodorous objects of examination. In the middle of the day, the sun beat through the sky light and descended with force upon the heads of the personnel, including Fred Temple, and the equipment and specimens, giving added odor to the specimens.

Besides Fred Temple, the others in the Laboratory at that time, in addition to Dr. Shore, were, James W. Kellogg, Miss Daisy Allen (now Mrs. L. L. Brinkley of Cognac), and C. F. Kirkpatrick. From 1910 to 1918, Mr. Temple, in addition to his clerical duties, made microscopic tests for tuberculosis and hook worm. It was during this period that the Rockefeller Foundation financed a campaign in North Carolina for the detection and elimination of hookworm, under Dr. John A. Ferrell, now Executive Secretary of the North Carolina State Medical Care Commission. Mr. Temple also helped with water analyses, and the knowledge of this work, which he gradually acquired, stood him in fine stead during the years of the first world war. He was drafted in 1918 and went to Camp Jackson, but was discharged for physical disability and returned to the Laboratory. Kellogg and "Pap" Jackson were inducted into the army and this left only Temple to take over the water analyses work until the return of Kellogg, who had it in charge.

During the flue epidemic of 1918, Carl Riddick, who had been administering the Pasteur treatment, died, and Temple took over for a year or more. That was before the anti-rabies vaccine was manufactured here and it was necessary to order it. This the Laboratory did, but persons throughout the State who were bitten by dogs supposed to be rabid had to come to Raleigh and remain three weeks while receiving their shots of the vaccine. There were sometimes as many as forty patients daily to take the treatment. In fact, the State Laboratory of Hygiene in that day was better known as the "Pasteur Institute" than by any other name.

The situation in this respect, however, eased off around the first of 1920 when

the State Laboratory of Hygiene began the manufacture and distribution to physicians over the State of rabies vaccine, at the old Jefferson Street site. From then until 1940, Temple prepared rabies vaccine for distribution.

Fred Temple's experience with the State Laboratory of Hygiene has been rather all-inclusive. It was at the Laboratory that his one real romance developed, with the coming to Raleigh from New York of Mary Frances Frank, in 1918. It was during that year that she became associated with the Laboratory, and her job at that time was to start the Wassermann tests for syphilis in North Carolina. She and Temple were married in 1922.

When the new farm near Cary was purchased and equipped in 1940, the manufacture of rabies vaccine was transferred there. It was then that Temple, who in 1923 had been made head of the Wassermann work, took up his duties in the new State Laboratory of Hygiene building on Caswell Square.

In looking back over some of the other highlights of his experience with the Laboratory, Temple recalls that, in 1918, the Laboratory was used extensively by Camp Polk. In 1940, when the draft for the second world war was instituted, the Laboratory was swamped with specimens for Wassermann tests. During one week alone, 135,000 came in, and they all received attention. It will be recalled that the State Board of Health, in cooperation with the military authorities, promoted a system of volunteer serological tests among registrants for the draft. Throughout the course of the war, there were several hundred thousand specimens taken and examined.

A spirit of contentment has accompanied Fred Temple throughout his years of experience in the State Laboratory of Hygiene and the service he has been permitted to render humanity. He pursues the even tenor of his way. While he came along the hard way, he has enjoyed every mile of it. He and Mrs. Temple, who reside at 1604 Fairview Road in Raleigh, have two daughters and a son.

CLINICS ARE GREAT HEALTH PROTECTORS*

As we have mentioned many times before, the Public Health Service has proved truly wonderful in its effectiveness in safeguarding the health of all the people.

If this service were at the disposal only of those who are afflicted with disease, the work could be said to be justifiable. But the measures taken to protect the healthy against contracting disease are really the most beneficial to the public at large.

What would you give, for instance, to know whether you are free of tuberculosis, or diabetes, or many other diseases which take toll in lives all over the country?

Well, the truth is, you don't need to estimate the cost to you. It's free.

The Public Health Service, of which the Harnett County Health Department is a part—a mighty big and important part, we think—puts forth every effort to safeguard your health and mine. It puts forth greater effort than in most places, to be sure, for you may note that our own Health Department's efficiency has called for and obtained such eminent recognition that the first Clinitron ever manufactured was sent to Harnett county to be used in the Diabetic Clinics just concluded.

We do not have at hand the figures showing the number of deaths in North Carolina last year caused by disease.

But we do have the number of highway fatalities for 1949. It is 843.

Now if the Highway Safety Department could have the advantage of some sort of clinitron to detect the potential in highway casualties, wouldn't it be fine to be able to apply a remedy?

The Health Service has outstripped the Safety Service in protecting us from untimely death.

Practically all kinds of measures have been adopted to decrease the highway fatalities, but so far none has proved effective. The dying goes on.

There were some who professed to believe—and still do—that the inspection of motor vehicles was the answer. They were doomed to disappointment before the program started. The reason: They didn't figure on the human equation. They didn't calculate that the nut behind the wheel is liable to be a loose one.

But back again to the Public Health Service. The News believes there is an adequate, practicable way to adopt and maintain all the measures in Harnett county put forth in the interest of safeguarding the public health.

It is to be devoutly hoped that the authorities having in charge the affairs of the county can see their way clear to regard our Health Department as highly important to all the people, and to make provision for it accordingly.

**From Harnett County News*

NATIONAL HEARING WEEK, 1950

THEME: GOOD HEARING MUST BE PROTECTED

DATES: Sunday, May 7 through Saturday, May 13

SPONSOR: THE AMERICAN HEARING SOCIETY

817 14th Street, N.W., Washington 5, D. C. In cooperation with its 119 local Chapters.

PURPOSE: To present to the American

public the facts regarding the national hearing problem, in order to stimulate activity which will help to remedy this problem.

THE PROBLEM DEFINED: 15 million people, including 3 million children, have suffered significant loss of the ability to hear.

The national hearing problem is the collective problem of all these children and adults; it is the problem of testing

the hearing of 24,000,000 school children, and of providing for those who require it, medical treatment and lip reading, speech correction, use of hearing aids, auditory training and other rehabilitation programs. It is the problem of preventing the frequently avoidable handicap of permanent loss of hearing; the problem of helping to re-cast the public's too-often amused or indifferent attitude towards another's hearing loss. It is the problem of preventing loss of jobs and the dissolution of stable home life which may result from a hearing loss. It is the problem of educating American families and teachers in particular about the hard of hearing individual, his psychological needs, as well as his medical and material needs and what the layman can do to help meet those needs.

THE PROGRAM: In cooperation with Federal and State agencies, with school and university officials, Community Chests, health and welfare agencies, the American Hearing Society and its 119 Chapters now provide eight types of service, designed to assist the hard of hearing child or adult.

These services vary from one Chapter to another, by reason of limited funds. However, a typical Chapter offers at least two of the following: audiometer tests, lip reading instruction, speech correction, voice improvement, auditory training, hearing aid consultation, courses for parents of hard of hearing children, and instruction of pre-school children with a hearing loss. Recreation activities are also offered as part of the rehabilitation program. Many of these services are free. Others are available at a nominal fee.

More than 8,000 individual Chapter members now benefit from these services, which should be available to any hard of hearing individual.

BUT CHAPTERS HAVE NOT THE CAPACITY (IN STAFF OR EQUIPMENT) TO MEET THE DEMANDS OF ALL OF THE HARD OF HEARING. NOR ARE THERE ENOUGH CHAPTERS TO MEET THE NEED.

THE NEED: To awaken in the general public a better understanding of the

national hearing problem, and to focus on this problem the attention of organized civic groups, business and industry, the press, the radio and television broadcasting industries, the American Hearing Society and each of its Chapters is supporting an intensive campaign during National Hearing Week.

THE PRIMARY NEED IS TO INFORM AMERICANS ABOUT THE SIZE AND SERIOUSNESS OF THE HEARING PROBLEM. The need is to let the public know that while one person in ten has impaired hearing, and while it is believed some 10 million persons need hearing aids, **there is a great deal that can be done to prevent a hearing loss from becoming a hearing handicap.**

HERE ARE FACTS EVERYONE SHOULD KNOW

CAUSES OF DEAFNESS

- Measles, mumps, scarlet fever
- Chicken-pox, Whooping cough, meningitis
- Diseased tonsils and adenoids
- Neglected running ears
- Wax or foreign objects in ears
- Uncontrolled or improper swimming
- Blows on the ears; frequent colds.

SIGNS OF IMPAIRED HEARING

- A listless and weary expression
- Frequent requests for repetition
- Mispronunciation
- Turning one ear towards the speaker
- Inattention; voice or speech peculiarities
- Continued failures in school grades
- Earaches; head noises; discharging ears
- Failure to respond to questions
- Avoidance of people

REMEDY, ALLEVIATION AND REHABILITATION

- Periodic hearing tests
- Treatment by an ear specialist
- Instruction in hearing health
- Use of hearing aid; skill in lip reading
- Auditory training; speech correction
- Voice training; vocational guidance
- Healthy mental attitude; social adjustment.

The primary objective is to prevent deafness.

The need is to arouse public officials so that **EVERY** school child will have his hearing tested regularly with scientific equipment; that these tests will be compulsory, and that they will be conducted by competent, trained technicians.

Twenty-seven States do **not** now require hearing tests for school children.

The need is to follow up this testing program with appropriate medical and educational measures which can be made available to every child who requires them.

The need is to inform all parents of

pre-school-age as well as school-age children that childhood disease **MAY** produce a hearing loss; that in many cases deafness can be prevented; that frequently the "slow" student needs only to have adequate care of a hearing loss to permit him to progress in school as well as a child with normal hearing.

Once this **primary** objective is understood, the necessary financial support of testing and follow-up programs will be far easier to obtain.

Local Chapters and the headquarters office of the American Hearing Society will gladly furnish additional data about hearing, as well as further information about National Hearing Week.

ENRICHMENT OF CHEAP FOODS RECOMMENDED AS HEALTH MEASURE

The cause of public health can be advanced by enrichment of cheap staple foods with vitamins and minerals, points out a report to the Council on Foods and Nutrition of the American Medical Association.

The report was prepared by George R. Cowgill, Ph.D., Sc.D., of New Haven, Conn., at the request of the council and appears in the Journal of the American Medical Association.

"Testimony offered in the hearings held by the Food and Drug Administration which resulted in the federal standards for enriched flour supports the view that the average American dietary does not furnish amounts of some essential vitamins and minerals sufficient to insure the public health," the report says.

Modern processing of some foods, such as white flour made from wheat, removes important amounts of vitamins and minerals, the report indicates. Enrichment of such depleted cheap stable foods by restoration of vitamins and minerals reduces the danger of deficiency diseases.

In some other foods, fortification (addition of a nutrient not naturally found) may be considered advisable, the

report says. For example, addition of iodine to salt is an important preventive of simple goiter in inland areas of the United States.

The policy of the A.M.A. Council on Foods and Nutrition is expressed in the following statement, according to the report:

"The council desires to encourage the restorative addition of vitamins or minerals or other dietary essentials, in such amounts as will raise the content of vitamin or mineral or other dietary essentials of general purpose foods to recognized high natural levels; with the provision that such additions are to be limited to vitamins or minerals or other dietary essentials, for which a wider distribution is considered by the council to be in the interest of the public health.

"Addition of vitamins or minerals should be limited to cheap staple foods which occupy substantial places in the dietary."

Both the A.M.A. council and the Food and Nutrition Board of the National Research Council have gone on record as favoring enrichment of flour and bread, fortification of milk with vitamin D, suitable addition of Vitamin A

to table fats and of iodine to salt for dietary purposes.

Both groups specifically oppose the addition of synthetic vitamins to carbonated beverages and confectionery.

"Twenty-three states (now 26) have passed laws requiring all white flour sold in their respective domains to be of the enriched variety, and enriched corn meals and corn grits are now available for combating pellagra," the report adds.

Achieving greater consumption of an enriched product by law had certain shortcomings as well as advantages according to the report.

"In the case of enriched flour used in Southern states the advantages are evidently believed greatly to outweigh the disadvantages," the report points out. "It is especially important that enriched flour be used extensively by the lower income groups of the population, who have the least money to pay for the improved product.

"Given the proper education, the general public will naturally prefer more and more the improved staple foods over those that are not improved; the extent to which this occurs will largely determine the role that this particular application of modern knowledge in nutrition plays in promoting the public health."

ACNE YIELDS TO SIMPLE TREATMENT

Acne can be cleared up or greatly improved by a simple program of treatment, an acne research project carried out at the University of Cincinnati College of Medicine shows.

Local treatment and simple advice from a physician can bring about rapid improvement and frequently effect a complete cure, says Dr. Helen Dexter of the Department of Dermatology and Syphilology of the college in the Journal of the American Medical Association.

"In the 100 cases studied, age of onset varied from 9 to 32 years and duration of the disease from one month to 24 years," Dr. Dexter reports.

"Significant aggravating factors were

found to be dietary and cosmetic habits; the way a patient customarily leans his face against his hand; emotional tension; a few drugs taken for other conditions, and occupational contact with oil and grease.

"The patients were advised on these matters. As a general rule, dietary restrictions were limited to chocolate, the cola drinks and excessive use of nuts and heavily fried foods.

"Local therapy consisted of day and night applications of hot lather two times in succession, followed by a cold rinse. Resorcinol (an antiseptic substance), sulfur and alcohol in a flesh-tinted, nongreasy base was applied once or twice a day. The soap recommended for use by the patient depended on the type of skin.

"With this treatment, the acne was arrested or greatly improved in all cases.

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DOCTORS WARNS AGAINST MOVING AUTOMOBILE ACCIDENT VICTIMS

Concussion (jarring and bruising) of the brain is the commonest cause of death in automobile accidents, according to Dr. Carl J. Potthoff of the American National Red Cross, Washington, D. C.

Headache and/or unconsciousness after the accident are usual signs of brain concussion. Dr. Potthoff points out in "Today's Health" (formerly Hygeia), magazine for the public published by the American Medical Association.

Dr. Potthoff lists four first aid measures to follow in cases of brain concussion:

"1. Keep victim quiet. Do not disturb him.

"2. Lay him on his back. Raise head and shoulders in most cases; if face is unusually pale, keep entire body flat.

"3. Give no fluids, food or stimulant. Do not try to arouse from unconsciousness by shaking victim or by other means.

"4. Get medical attention. In serious cases call physician to scene. There is much danger in rushing victim pell-

well to hospital; quiet is his most important immediate need."

FIND RICE DIET FAILS TO REDUCE BLOOD PRESSURE

The rice diet did not effect any significant reduction in blood pressure during a trial on 12 patients, according to a report by a group of New York doctors.

The doctors are Herbert Chasis, William Goldring, Ernest S. Breed, George E. Schreiner and Alfred A. Bolomey, of the New York University College of Medicine. Their report appears in the *Journal of the American Medical Association*.

Twelve patients with essential hypertension (high blood pressure of unknown cause) were selected from the Hypertension and Nephritis Clinic of the New York University Clinic and from the Third Medical Division of Bellevue Hospital, the doctors say.

These patients were maintained on a balanced diet for 14 to 79 days to stabilize their blood pressures. They were then placed on the rice diet for 14 to 98 days. Observations of four patients were continued during a second period on the balanced diet after discontinuance of the rice diet.

"The changes in blood pressure observed in these patients did not exceed the random, spontaneous variations to be anticipated from the control data on these patients and from the variations in pressure observed in other patients kept in the hospital under similar conditions without restriction of diet," the doctors point out.

During the latter part of the rice diet period, five patients were given daily doses of sodium chloride (ordinary table salt).

"A prompt and significant increase in pressure occurred in four of the five patients," the doctors say, adding:

"Although the cause for this rise in blood pressure is unknown, the phenomenon suggests that salt restriction may be more important than dietary restriction in effecting such reduction in blood pressure as have been reported by others on the low salt, rice diet."

DOCTOR GIVES HEALTH TIPS FOR AIR TRAVELERS

Most people can now travel by air without any qualms about upsetting or harmful results from the altitude, says Dr. William Bolton, Chicago, associate director of the American Medical Association's Bureau of Health Education.

In some questionable instances, however, medical consultation should be obtained before a flight is attempted, Dr. Bolton points out in "Today's Health" (formerly *Hygeia*) magazine for the public published by the A.M.A.

"Protection against possible development of motion sickness includes wearing warm clothes and use of cotton plugs in the ears to reduce the effects of vibration and noise," Dr. Bolton says. "A simple procedure that is recommended if one feels ill during a flight is to tilt the head back against the seat. Specific medication may be prescribed by a physician.

"Anemia may be a definite cause of individual inability to obtain sufficient oxygen for the body's needs even when a flight is being made at the usual heights of one or two miles. It is a matter of common sense for the prospective air traveler with anemia to have the condition of the blood checked.

"Those with certain forms of heart disease may require careful analysis of the pros and cons by their physician before taking an air trip. Some can be affected adversely by flights at relatively low levels, but travel in pressurized cabin planes obviates such hazards.

"Among specific disorders that should be studied are angina pectoris and disease of the heart's blood vessels that may have reduced permanently the blood supply to that organ. High blood pressure is not considered a barrier to air trips unless its upper level is over 200 and the lower about 120.

"Severe chronic bronchitis is a potential hazard because of the excessive strain resulting from strong, prolonged coughing, as well as the interference with normal oxygen and carbon dioxide exchange in the lungs.

"Patients with active tuberculosis are considered undesirable risks unless the

sputum is germ free and lung cavities have been obliterated. When air has been injected within the chest cavity to collapse a diseased lung, no flying at all for a week and thereafter a pressurized cabin or low flight level are advisable.

"Acute inflammation of the nose or throat should constitute a warning against airplane travel. Changes in pressure associated chiefly with ascent and descent may be sufficient to force infection into the middle ear or sinuses.

"Active ulcers in the stomach or intestinal tract should be evaluated carefully before one decides to take to the air. The chief possible danger is that changes in air pressure within the digestive system may cause excessive strain on weakened ulcer areas and thus result in perforation or serious hemorrhage.

"Obviously, persons with infectious diseases such as measles, whooping cough, influenza and other serious conditions should be rejected for flying because in many such ailments the nose and throat are extensively involved and because the patient represents a health hazard for other passengers."

—O—

NUTRITION OF CHILDREN OFTEN IS UNSATISFACTORY

Application of nutrition to children has not kept pace with present-day knowledge, according to a report to the Council on Foods and Nutrition of the American Medical Association.

"In a general way we have done reasonably well nutritionally for our babies, but no so well for children past infancy," points out Dr. Phillip C. Jeans of Iowa City in the *Journal of the A.M.A.*

Nutrients most commonly found deficient in diets of children are vitamin D; calcium; riboflavin and thiamine (factors of the vitamin B complex); protein, and vitamin C. Dr. Jeans says.

"Vitamin D commonly is deficient in the diet of the child," Dr. Jeans emphasizes. "Many children receive an inadequate amount of sunshine in the summer and few receive a sufficient amount in winter. Giving vitamin D

preparations has become routine in infancy, but relatively few mothers realize that vitamin D is important throughout the growth period."

Milk is the only constant good food source of calcium, Dr. Jeans says. Calcium deficiency, at least in moderate degree, is believed to be widely prevalent in childhood. A quart of milk daily contributes an abundance of calcium and supplies most of the protein need of the young child and half the protein need at the beginning of adolescence.

Use of whole grain cereals and enriched or fortified cereal foods contributes importantly to the satisfaction of needs of children for the vitamin B complex factors, according to the report. Eggs also contribute importantly to the supply of B vitamins and should be included in the diet frequently, preferably daily.

Data indicate that the great majority of children studied have a protein intake below that needed for best nutrition. The weight of such children usually is within what is considered the normal range. Vitamin C can be supplied by eating citrus fruit or tomatoes daily.

Lack of appetite in children brought to pediatricians usually is dependent on training in feeding habits and usually originates in infancy, the report says.

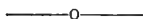
"The interrelationships which are set up between mother and child during the early days and weeks after birth set a pattern which is important in determining the response the child will have toward eating."

An infant fed by an impatient or exasperated mother is not likely to eat well or digest his food satisfactorily. Changes in the type of food or manner in which it is given may be upsetting to a baby and are best made when the infant is in a mood to accept them.

"Feeding by both parents is helpful in fostering emotional development," the report says. "The infant's manual preparedness in feeding develops after six or seven months and should be encouraged so far as is feasible. Acceptance of new foods is affected greatly by the attitude of the mother toward those foods. If a mother has a revulsion to-

ward a food, communication to the baby of her emotional state is common, with the result that the baby refuses the food.

"The so-called self-demand schedule has become fairly common. Much is to be said in favor of having the baby's feeding time when he is most frequently hungry. Usually such a schedule is regulated by the mother. Thus the schedule is easily subject to abuse and the baby may be fed every time he cries, a procedure that leads to faulty feeding habits."



REFUTES IDEA THAT ALCOHOL STIMULATES NERVOUS SYSTEM

The idea that alcohol acts as a stimulant to the nervous system of man is no longer held in pharmacologic circles, says a medical consultant in answer to a query in the *Journal of the American Medical Association*.

"Small doses of alcohol appear to have a stimulating action by giving the drinker a feeling of well-being and increased self confidence, but unfortunately with a loss of judgement and the ability of self criticism," the consultant points out.

"The apparent stimulation is the result of the narcotic action of alcohol on the inhibitions. This depressant action involves first of all the higher centers of the brain, which are responsible for acquiescence to the habits of civilization.

"The dulling of the feeling of responsibility allows the more primitive cerebral functions to dominate. The fallacy of the stimulating effect of alcohol is greatly enhanced by the drinker who is convinced that he is performing better when he is under the influence. One doctor has aptly compared this apparent stimulation to a car on a hillside. Alcohol releases the brakes but does not cause the car to run better.

"The feeling of warmth after taking alcohol is deceptive, because this feeling is associated with rapid heat loss."

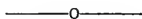
The consultant cited a German researcher who referred to the manifestations usually attributed to the "stimulating effect" of alcohol as the results

of a beginning paralysis of certain parts of the brain.

"In the psychic sphere, the finer grades of attention, judgement, reflection and ability to comprehend are first lost," the consultant quoted the German researcher as saying. "This serves to explain the typical behavior of persons under the influence of alcoholic drinks.

"The soldier becomes more courageous since he observes the danger less, and reflects upon it less. The speaker is not tormented and influenced by the proximity of the public; he, therefore, speaks more freely and with more animation. One's self-appraisal rises greatly. Often one is astounded at the ease with which he expresses his thoughts and with the keenness of his judgement in matters which are beyond his mental sphere when sober, and is later ashamed of this delusion.

"The drunken individual attributes to himself great muscular strength and wastes this through unaccustomed and useless exhibitions of strength without thinking of the harm which may ensue, while the sober person willingly spares his strength."



FORESEE SENSATIONAL MEDICAL ADVANCES DURING SECOND HALF OF 20TH CENTURY

Sensational medical advances of the past 50 years probably will be overshadowed by medical progress during the second half of the 20th century, according to an editorial in the *Journal of the American Medical Association*.

Cancer, epidemic poliomyelitis, arthritis, degenerative diseases and some conditions of the central nervous system are listed by the editorial as diseases which doctors hope to conquer in the "comparatively near future."

"The advances of medical sciences since the beginning of the 20th century offer convincing evidence of what can be done when competent researchers can work with freedom, facilities and funds," the editorial says.

"Never in the recorded medical history of the world have there been so many inspiring discoveries the import-

ance of which has startled at times entire nations. While fundamental discoveries have been made by researchers throughout the world, the practical application of these discoveries, especially during the last two decades, has been effected particularly in the United States.

"Formerly other countries were regarded highly for their research discoveries and the utilization of research findings, but more recently war and the suppression of personal freedom, among other factors, have intervened so that today researchers from all over the world look expectantly, perhaps even with envy in some instances, toward the Western Hemisphere for its scientific explorations.

"The research being undertaken elsewhere in the world should not be underestimated and should be encouraged. However, unquestionably it is not as productive as it would have been if catastrophic influences had not intervened.

"A review of the medical discoveries since the turn of the century provides so many revelations that books could be and have been written of the importance of these findings. Drugs and operations, for example, alone can provide endless material for stories of the onward march of the medical researchers. Insulin, vitamins, sulfonamides and penicillin are only a few of the outstanding discoveries in the drug field.

"Operations formerly undreamed of are now everyday occurrences. Isotopes and betatrons have become part of the medical language. Ideas now only in the stage of laboratory development are in some instances truly startling. Even entirely new approaches to illnesses have been conceived, as the result of which the full possibilities of formerly practically unknown subjects, such as physical medicine and rehabilitation, are being explored with a thoroughness that offers much promise for the future. Truly the past fifty years have been remarkable for those who devote their lives to the prevention of illness and the treatment of the sick.

"One of the frequently overlooked aspects of these modern medical miracles is the recentness of many discoveries and the speed with which these discoveries were put into practical use. Insulin sounds like an old name, but it was discovered in the early twenties. The sulfonamides have been in general use only two or three years more than a decade. The widespread use of penicillin is less than ten years old.

"Only a comparatively short time ago these and other drugs were at best research dreams. Yet today they are available in almost inconceivable amounts and have changed completely the control of many diseases. Some diseases have almost been eradicated; at least they do not constitute serious health hazards. Other diseases are being brought under control at such frequent intervals that many persons have not grasped the enormity of such medical efforts. They accept these advances as commonplace.

"It has been possible in some countries to search successfully for answers to health problems, while in other countries the research explorations are hampered constantly by various influences. Time after time in some countries lack of understanding and even selfish interests have interfered with the efforts of researchers to seek new treatments or explore new paths leading to new treatments.

"In some instances research has been by government decree. The results have shown the fallacy of such direction of effort. In the United States today it is still possible to engage in research without political interference, although from time to time there are attempts to introduce measures which would remove in time all barriers to the political control of research and its participants.

"Because of the present freedom, physicians learn almost daily, it seems, of new treatments, and patients receive the benefits of these medical advances as soon as their value is determined satisfactorily.

ALICE NOBLE, LIBRARIAN
SCHOOL OF PHARMACY, U.N.C.
CHAPEL HILL, N. C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

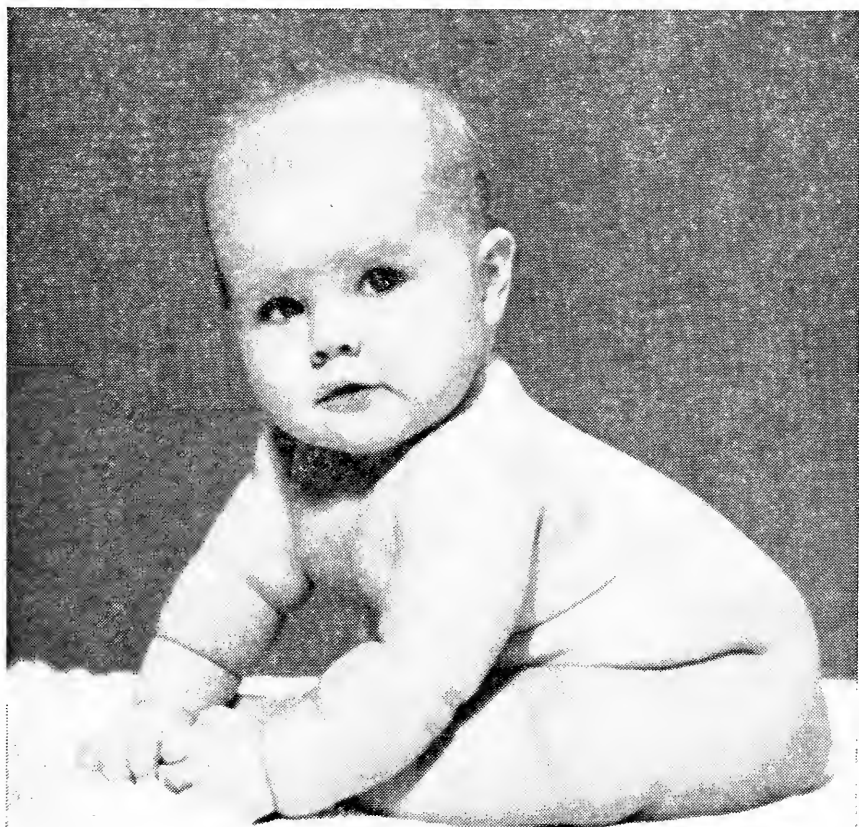
This Bulletin will be sent free to any citizen of the State upon request

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

MAY, 1950

No. 5



BARBARA JEAN HOWARD at Age 6 Months, daughter of
Mr. and Mrs. W. R. Howard, New Bern, N. C.

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
Appendicitis	Infantile Paralysis	Typhus Fever
Cancer	Influenza	Veneral Diseases
Constipation	Malaria	Residential Sewage
Diabetes	Measles	Disposal Plants
Diphtheria	Pellagra	Sanitary Privies
Don't Spit Placards	Scarlet Fever	Water Supplies
Flies	Teeth	Whooping Cough
	Tuberculosis	
Epilepsy—Feeble-mindedness, Mental Health and Habit Training		
Rehabilitation of Psychiatric Patients		
The National Mental Health Act.		

SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
Prenatal Letters (series of nine monthly letters).	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
The Prevention of Infantile	One to Two Years.
Diarrhea.	Two to Six Years.
Breast Feeding.	Instructions for North Carolina Midwives.
Table of Heights and Weights.	Your Child From One to Six
Baby's Daily Schedule.	Your Child From Six to Twelve
	Guiding the Adolescent

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Health Bulletin

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

*THE EDUCATION OF PARENTS IN CHILD TRAINING

Robert J. Murphy, M.D., State Board of Health, Raleigh, N. C.

The education of parents in child behavior is just as important as the training of children. All parents need a working philosophy of growth, which will give them a perspective to the every day problems of childhood. The father, as well as the mother, should participate in child training; and should be taught to have a happy relation with their children. Only too often one sees parents who threaten, slap, beat and scold their children. A happy parent-child relationship tends to develop in the child habits and patterns of conduct and mental attitudes which enable the child to attain independence and normal control of his own emotions and habits. Without the happy child-parent relationship undesirable habits may be formed; periods of resistance and anxiety may also develop early in the child's life. Sometimes bad habits of childhood are due to devoted but, misguided parents, and to grandparents who try to live the child's life for him instead of letting him develop his own life along patterns which are best suited for him. The parents should recognize that each child is an individual and is different from the other children. This difference is brought out in the way that he grows and develops. Some children begin to walk at nine months, others may wait until eighteen months before they are ready to walk, yet each of these children is normal. Nobody expects a newborn to sit up, or a six months old to walk. However, many of our practices of feeding babies, and

teaching them to control their bowels and bladder, and urging them to walk early repeatedly violates the principle by teaching a child before he is ready. Those who study development of the body have shown us that the nerves develop slowly and that until a connection has been well established between a nerve and muscle, the muscle will function badly or not at all. Once, however, this nerve-muscle unit is complete it is ready to learn its function in terms of the body as a whole. When a child is ready to walk, he will walk. Trying to get him to walk early just because a neighbor's child has walked early is a waste of time and effort. The same principle can be applied to weaning. When a child begins to show interest in a cup or a glass and attempts to drink out of it, that is the time for weaning. He demonstrates that he is ready. Parents should encourage the child to drink out of a cup even though his first attempts are very clumsy and are incident to considerable spillage. When a child is ready to feed himself he will try to use the spoon, awkwardly at first, but he should receive encouragement. Being able to use the cup and the spoon develops their independence. Toilet habits may be acquired by some children by the tenth month, and the others will wait for control of the anal and bladder sphincters until the end of the second year. More harm than good may result from too early and especially too insistent efforts at training. When the infant has but one bowel movement a

day, and this is usually passed at the same time each day, it is a relatively easy matter for him to acquire bowel training. Usually bladder training is at a much later date. Bladder training during the day is fairly easy, if the child is from fifteen months to eighteen months of age, and is able to understand the motive. However, on the average, night control of urination is usually not accomplished until between the second and third birthdays.

Habits of Sleep

The first six months of an infant's life is taken up mostly by sleep, which totals anywhere from eighteen to twenty hours a day. By the six months period the infant usually sleeps from sixteen to eighteen hours and has usually acquired the habit of sleeping through the night. By one year of age the infant sleeps about fourteen to sixteen hours, and by two years from twelve to fourteen hours. The infant from one to two years of age is usually put to bed after the evening meal between 6:00 P. M. and 7:00 P. M. Up to the age of six years a daily nap is desirable, however, the sleep habits will vary with the individual, but this is the average.

Enuresis

This term implies involuntary discharge of urine. This is better known as "bed wetting." It may result from an over emphasis in bladder training, as well as a lack of training. Occasionally normal children may have "an accident" during the day because of some excitement, which is considered normal. However, if the child goes beyond three years of age without bladder control then the child should be seen by the family physician or pediatrician, because there may be some physical reason for this condition. The most common cause, however, is a neurogenic disturbance. Any influencing factor causing enuresis should of course be searched for and eliminated. Punishments are usually not effective and have the opposite consequence. Some physicians suggest that the child empty the bladder just before going to bed; and occasionally the child is awakened

at 10:00 P. M. or 11:00 P. M. and is placed on the toilet. A moderate restriction of fluids at night is also helpful.

Thumb Sucking

Thumb sucking is usually considered as a normal habit in the infant up to the second year of life. If it continues after the second year there is some feeling among the orthodontists that it may disturb the dental arch. If the thumb sucking continues after the sixth year the dental deformity may be more serious. Dr. Gesell, of the Yale University Clinic of Child Development, feels that thumb sucking is often related to the control of feeding and sleeping, and usually begins anywhere from the eighth to the twelfth week. When related to feeding the habit does not usually last long, however, when it is related to sleeping the thumb sucking is usually of longer duration. He feels that when the practice persists beyond the third year it becomes a generalized tension outlet, and is utilized for an escape, or for relaxation, or in situations of embarrassment. When the habit occurs in the first two or three years little attention should be paid to it, as it is usually self-limited. The parent should not call attention to it, such as to smear quinine on the fingers, or to put adhesive tape on the fingers, as this only serves to intensify it. When older children persist in sucking their fingers as a habit it is usually a manifestation of general emotional and social immaturity. Study of older thumb sucking children and their life situations will bring out usually some conflicts and needs and will pave the way to a broad program of personal and social adjustment.

Temper Tantrums

Almost every infant has a few tantrums during a period in his development between his second and third year. The initial tantrums require no elaborate therapy. The child should be ignored. Sometimes tantrums are a part of the child's desire or need for attention.

Summary

The education of parents to the normal growth and development of children is the first step in teaching them how to train children. First, let the child set its own pace in the development and try not to teach a child before he is ready to be taught. Second, each child needs to have the sense of belonging and of being wanted. Affection that a parent gives a baby tells him that he is wanted and is cherished, and gives him a sense of security. This is very important in his emotional development. There is a difference in showing affection for a child and in pampering him. Third, a child needs to have experience in self-sufficiency. He should learn to feed himself when he shows a readiness for being fed. The foundation of personality and happiness

are laid in early childhood when the child's mental and emotional traits are in the making. As the parents care for his physical and emotional needs they help the child to develop into a natural, normal, healthy person.

Following are a list of a few books which are helpful in child guidance:

- (1) *As The Twig Is Bent*—Dr. Leslie B. Hohman, Macmillan
- (2) *Feeding Our Old-Fashioned Children*—C. A. Aldrich, Macmillan
- (3) *Babies Are Human Beings*—C. A. and Mary M. Aldrich, Macmillan
- (4) *Your Baby*, Shultz and Hill, Doubleday
- (5) *Infant and Child In The Culture of Today*—Dr. Arnold Gesell, Harper Bros.

*Adapted from several pediatric source books.

NOTES & COMMENT

BY ACTING DIRECTOR

FRONT COVER—Miss Barbara Jeanne Howard at age six months—Barbara Jeanne is the daughter of Mr. & Mrs. W. R. Howard of New Bern, North Carolina. Barbara Jeanne's Mother is the former Dorothy Bess Dowd, whose picture provides the front cover cut for the May, 1930 Bulletin—thus in a period of twenty years we are privileged to produce on our front cover the Mother and her Daughter.

HISTORY AND FIGURES—On pages 15 and 16 of this issue of the Health Bulletin we find a wealth of information. There are recorded as numbers new members of our population as well as the deaths that were related to the advent of new life or its quick departure from the stage of history. Of the 3,500,000—plus, children from in the Continental United States in the year, 1948, there are unquestionably some that will achieve sufficient fame or fortune to occupy pages or may have volumes of written history; others—instead of being heroes may be villains and play a shameful part in the years to come.

The vast majority will occupy that middle-ground—even as you and I who are endeavoring in our own meager way to fill a part in the community in which we live.

In North Carolina the provisional data for 1949 shows that 106,568 live-births occurred. What we do in North Carolina will help to determine the number of these that become mature men and women, capable of filling responsibilities required of them in the 1970's and beyond.

Since page 15 gives the information concerning live-births, infants' deaths and maternal deaths for the States of the Union for 1948—it will take a quick look to see the part North Carolina played in these eventful figures. The birth-rate for the Continental United States was 24.2 per thousand population. North Carolina with 109,430 live births for that year had a birth rate of 28.8, considerably in excess of the rate for the nation. Only six others had a higher birth rate than North Carolina: New Mexico, with a rate of 35.9 was followed by Utah, Mississippi, Alabama,

Georgia, and South Carolina. Infant Mortality in 1948 was 32.2 for the United States as a whole—North Carolina's rate was 35.3 which is slightly worse than our record for 1947 when we had a rate of 34.9. Just why our rate increased slightly and the rate for the nation decreased slightly; that is, from 32.2 to 32.0, we are unable to state. The fact remains that some of the other states also had poorer records in 1948 than 1947. Fourteen states had higher infant mortality rates in 1948 than North Carolina, and Florida had the same rate as North Carolina. The following had higher rates than North Carolina: Alabama, Arizona, Colorado, Kentucky, Louisiana, Mississippi, Nevada, New Mexico, South Carolina, Tennessee, Texas, Virginia, West Virginia and Wyoming. New Mexico which had the highest birthrate also had the highest infant mortality rate—70.1 or almost twice that of North Carolina. So often have we seen a high birthrate and a high infant mortality rate go hand in hand that it is interesting to note that Utah—which had the second highest birth rate in 1948, coming up on infant mortality rates considerably less than that of the nation—27.4. Perhaps the smaller number of births—20,714—gave us numbers too small to be of significance. A flash-back to 1947 would suggest this explanation because in that year infant mortality rates for the state of Utah was 41.4.

When we look at maternal deaths we find the rate for the United States at 1.2 and North Carolina at 1.9. We should not forget that for the five year period 1932-1936 our infant mortality rate averaged 7.1—Truly this shows remarkable progress in a fifteen year period. It should be recalled, however, that in 1947 our rate was 1.7, therefore, we have lost a point in a year. If we look forward to 1949 our provisional rate which should not be greatly changed is 1.2—the same identical figure as the rate for the United States in 1948.

While we have made very gratifying advances in the protection of motherhood in North Carolina, we have not been going forward any more rapidly

than the country as a whole. In 1947 there were nine states that had worse infant mortality rates than North Carolina. In 1948 that number had decreased to six. These are: Alabama, Arkansas, Georgia, Mississippi, New Mexico and South Carolina. Again North Carolina is tied with Florida with identical rates of 1.9. There were two states with a record of 0.5 or less—Oregon occupies the honor roll with a rate of 0.4. The State of Washington is next with 0.5. Seventeen states and the District of Columbia have rates between 0.5 and 1.0.

Page 16 gives us the provisional rates for the State of North Carolina for 1949 and for the counties comprising the State. Our infant mortality for 1949 is 37.9. Please remember that in 1948 it was 35.3. This is not the kind of progress we like to make. We like to "Go Forward" not backward. There are five counties in the State which had rates of less than 20. They are Hyde, McDowell, Orange, Yadkin and Transylvania. There were nine counties that had rates between 20.25: Alamance, Alexander, Burke, Clay, Montgomery, Moore, Person, Randolph and Watauga. Rates like these help to pull down the rate for the State. There were seven counties, however, that had higher rates than 60: Beaufort, Camden, Chowan, Hoke, Scotland, Tyrrell and Vance. There were six with rates between 55 and 60: Bertie, Bladen, Columbus, Gates, Pamlico and Wilson.

Maternal Mortality in North Carolina for 1949 has shown by provisional figures 1.2—the lowest rate we have ever recorded. There were 45 counties that reported not maternal deaths during the entire year. Most of these, however, were counties reporting less than 1000 live births. Ten of these had more than 1,000 live births with no maternal deaths. They are: Alamance, Beaufort, Burke, Davidson, Harnett, Haywood, Iredell, Surry, Union and Wilkes. The following counties had births considerably in excess of 1000 with only one maternal death: Catawba, Guilford, Mecklenburg and New Hanover.

In these figures we have romance

connected with every birth and tragedy connected with every maternal and infant death. Much could be written about each individual who comprises a part of these figures. We who are endeavoring to promote public health are disposed to think of these figures as representing human beings. Our efforts are dedicated to the saving of human life. It is imperative that we and those who follow us must be unrelenting in our efforts.

MORBIDITY STATISTICS—In years gone by the Bureau of Epidemiology has every year mimeographed a report showing the prevalence of each communicable disease which constitutes a public health problem. Each year this mimeographed report has become more voluminous. 1950 witnessed the first printed report of the Division of Epidemiology. There is much interesting data in this printed report. One page in part shows the number of reportable diseases tabulated for each year since 1918. These figures tell the story of progress in our fight against those communicable diseases for which we have specific preventive measures.

Year	Diphtheria	Small-pox	Typhoid Fever	Whooping Cough
1918	1,366	983	3,461	11,645
1919	3,519	2,322	2,956	5,669
1920	3,422	2,961	1,856	8,465
1921	5,136	2,513	2,099	9,513
1922	8,136	1,409	1,960	6,905
1923	4,671	3,352	1,577	16,075
1924	4,095	3,845	1,318	12,945
1925	3,437	1,920	1,192	4,296
1926	3,198	1,594	1,502	11,099
1927	3,034	1,702	1,280	19,996
1928	3,826	2,419	1,073	5,002
1929	4,337	589	861	12,434
1930	3,248	556	1,000	10,093
1931	3,156	63	991	6,992
1932	1,895	72	823	12,137
1933	2,497	35	684	7,155
1934	2,114	18	464	14,299
1935	1,720	24	645	10,075
1936	2,347	19	518	1,566
1937	2,056	11	493	7,782
1938	2,442	35	485	14,908
1939	2,368	15	343	9,321
1940	1,125	6	238	5,500
1941	1,629	4	197	10,932
1942	1,187	7	181	5,557
1943	801	21	111	8,408
1944	665	4	122	6,355
1945	1,475	1	82	5,834
1946	590	2	54	3,391
1947	751	2	47	2,983
1948	506	3	59	1,976

U. S. RANKS WITH LEADING NATIONS IN PREVENTING INFANT DEATHS

Rapid strides in improving and applying medical techniques of caring for babies have made the United States practically equal to any other nation in the world in preventing infant deaths, an American Medical Association study shows.

The study, which was recently completed by Frank G. Dickinson, Ph.D., and Everett L. Welker, Ph.D., Chicago, of the A.M.A. Bureau of Medical Economic Research, and published as Bulletin 73, is summarized in the Journal of the association.

One reason for the marked improve-

ment in this country's infant death rate is that in recent years the two diseases which are the major causes of deaths of babies over one month and under one year—pneumonia and infant diarrhea—have largely been conquered in most sections of the United States, according to Dr. Dickinson.

This medical advance has brought about a reduction in deaths of babies from six months to a year of age, he said. During 1946, the latest year for which specific information is available, the United States had the world's lowest infant death rate for this age group.

The difference between the infant death rates of this country and New Zealand, the leader, for the first month of life is largely a statistical illusion, the study shows. Differences between the definitions and rules of the two countries regarding stillbirths and early infant deaths explain two thirds of the difference between the current total infant death rates of the two countries.

Also, the United States includes in its computation of infant death rates the infant deaths among all racial groups, a fact which helped to give Arizona, New Mexico and Texas, where numbers of American Indians and persons of Spanish-American (Mexican) descent are found, the highest total infant death rates for 1948 in the nation. New Zealand excludes infant deaths among its native Maoris.

The decline in infant deaths in the United States during the last 15 years has been very great. Since the middle 1930's, the infant death rate for the United States declined from 56 in 1935 to 32 in 1947, while the rate for New Zealand declined from 32 to 25, Dr. Dickinson said.

* * * *

EXPOSURE TO CARBON TETRACHLORIDE FUMES MAY CAUSE BLINDNESS

Three cases of blindness developing in industrial workers exposed to the fumes of carbon tetrachloride are reported in the current (March) Archives of Industrial Hygiene and Occupational Medicine.

One man was employed in a plant making automatic razors, another as an electrician in an aluminum extraction plant, and a woman in a dress manufacturing establishment, according to Dr. Adelaide Ross Smith of the Division of Industrial Hygiene and Safety Standards of the New York State Department of Labor, New York.

In one patient, visual defects cleared almost completely after about a month of treatment, but in the remaining two only some sight had returned four and seven years after exposure, Dr. Smith says.

EDUCATION OF PARENTS NEEDED ON BABIES' RESPIRATORY DISEASES

Efforts to prevent sudden death of infants should be directed toward diminishing their exposure to known sources of infection during this highly vulnerable period of infant life and to the education of parents in the early signs of acute respiratory disease and their significance. This opinion is expressed in an editorial in the Journal of the American Medical Association.

Recent studies have shown that many cases thought to be accidental suffocation have been caused by respiratory disease, the editorial says.

At a conference held under the auspices of the Children's Bureau of the Federal Security Agency and the National Institutes of Health, the situation was summed up as follows, according to the editorial:

"Each year in the United States a large number of babies under one year die of 'accidental mechanical suffocation.' The story usually is this:

"An infant, in apparent good health and usually between the ages of two and five months, is put to bed in a crib or baby buggy or in bed with his parents. Several hours later the infant is found dead. Sometimes he is lying on his face; sometimes bedclothes are over his head. Often in the excitement of the discovery the exact conditions are unnoted.

"There is now abundant evidence that most of these deaths are not due to any external cause but may be the result of a sudden overwhelming infection. When a careful history is taken, information is often brought out concerning respiratory infection in the family, and there may be some indication that the baby himself had not been up to par."

* * * *

LINKS CHRONIC FATIGUE TO EMOTIONS AND INADEQUATE DIET

That tired feeling and lack of pep may be caused by emotional stress and inadequate diet, a Chicago doctor said today.

Skipping breakfast and the use of

sugar, alcohol and tobacco are to be avoided by persons who become tired too easily before meals and in the morning, according to Dr. Sidney A. Portis of the College of Medicine of the University of Illinois.

The role played by a good breakfast in preventing fatigue was pointed out by Dr. Portis in a report in the Journal of the American Medical Association.

"Too much emphasis cannot be placed on the importance of a good wholesome breakfast," Dr. Portis said. "Too many people rush to their occupations without being fortified with needed calories to do the day's work. This is especially true of women."

Avoidance of candy, cakes, pies, tobacco, alcoholic and carbonated beverages, fatty meats and fried foods also was stressed.

The study included 929 patients with chronic fatigue. Those treated by regulation of diet, psychotherapy and administration of atropine sulfate were returned to "near normal status," Dr. Portis said.

Prolonged or temporary stimulation processes may result in excessive secretion of insulin, he reported. This condition produces a relative deficiency of sugar in the blood. Injection of atropine sulfate prevents excessive secretion of insulin from this stimulation and allows the blood sugar to return to near normal.

* * * *

DOCTOR LISTS 'TEN COMMANDMENTS' FOR INSOMNIA SUFFERERS

It's just as easy to get in on the wrong side of the bed as to get out that way, according to Dr. Paul H. Fluck of Lambertville, N. J.

Except in cases due to outright physical or nervous disease, most insomnia is caused by bad sleeping habits or by upsetting the regular routine at bedtime, he says in Today's Health, magazine for the public published by the American Medical Association.

Dr. Fluck advises the following "ten commandments for good sleeping."

1. Go to bed at the same hour every night.

2. Try to get at least one hour of sleep before midnight.

3. Drink no more than a glass of milk or eat no more than a small bowl of cereal before retiring.

4. Never eat or drink ice cold foods before retiring. Ice cream is the worst kind of midnight snack.

5. Never listen to the radio in bed.

6. Never, positively never, read in bed.

7. Provide a regular schedule for the hobby, dog or wife or husband who interferes with your rest.

8. When you go to bed, close your eyes and go to sleep.

9. If that doesn't happen, try to remember what position you awake in the next morning. Then take that position when you go to bed that night.

10. Relax every nerve, muscle and thought. Patience won't kill you; sleeping pills may.

* * * *

FIND CRITICISM INJURES CHILDREN WITH READING DISABILITY

Criticism by the teacher and parents makes a child who reads poorly lose confidence in his ability to do school work and leads to the development of various emotional problems, with psychologic blocks which further aggravate the condition.

This point is brought out in an editorial in the Journal of the American Medical Association which says that an estimated 12 per cent of all children in the United States fail to learn to read as well as the average of their school class.

"It is doubtful that there is in these children any underlying organic lesion," "Emotional factors such as fear, anxiety, rivalry, jealousy, hostility for the parent or the teacher and a feeling of inferiority undoubtedly play an important role in creating these difficulties."

Three recent articles in medical publications pointed out the belief that the new method of teaching reading the so-called "flash" method, is an important contributory factor in the creation of these disabilities, according to the editorial.

"The flash method employs whole

words on cards with pictorial representation to develop pure visual associations," the editorial says. "The method was expanded into a phrase and later into a sentence method. The child on entering school immediately learns to read whole sentences."

Another article in a medical publication points out that, while this method produces rapid and intelligent readers, it tests to the limit the child's power of attention and concentration, the editorial says, adding:

"These authors feel that certain minor difficulties (of vision) which were of minor importance under the older methods of teaching have now become significant."

According to one author, there were three times as many cases of reading difficulties among children who had been taught by the flash method as among those who had been taught by the older phonetic method, the editorial says.

* * * *

It is now safer for a woman to have a baby than not to have one. Ten years ago, each one thousand births caused the deaths of five mothers. Now the rate of deaths of mothers in childbirth has been reduced to one in a thousand live births. The death rate during pregnancy and childbirth is now less than for any nine month period in the same age group of women.

"Briefs"

* * * *

CITES DESIRABILITY OF BREAST FEEDING FOR BABIES

Most mothers can give their babies the nutritional and emotional benefits of breast feeding, a doctor who made a study of methods of breast feeding reports.

Various demonstrations have proved convincingly that almost any mother who wants to can breast feed her baby as long as she and her doctor desire, says Dr. Frank Howard Richardson of Asheville, N. C., and the Children's Clinic, Black Mountain, N. C., in the Journal of the American Medical Association.

Breast feeding has been shown to

reduce mortality and sickness percentages, enhance immunity to gastrointestinal and respiratory diseases and contribute emotional benefits claimed by psychologists for mother and baby alike, Dr. Richardson points out.

* * * *

FIND ETHYL ALCOHOL UNSATIS- FACTORY DISINFECTANT FOR WOUNDS

Ethyl alcohol, the ordinary alcohol of commerce and pharmacy, should not be used as a disinfectant in wounds or on raw surfaces of injured areas, according to a Salt Lake City doctor who made a study of the substance.

The antibacterial action of ethyl alcohol is neutralized by proteins present in the wound, says Dr. Philip B. Price of the University of Utah College of Medicine. Dr. Price's report appears in Archives of Surgery, published by the American Medical Association.

Further, the alcohol is painful, injures wound tissues and delays wound healing, Dr. Price points out.

Simple solutions of ethyl alcohol are not satisfactory agents for cold sterilization of surgical instruments, Dr. Price also found.

Seventy per cent alcohol (by weight) in water, however, is still believed to be the "solution of choice" for disinfection of the skin, he says. On healthy skin, this solution is powerfully destructive to germs and harmless to the body.

* * * *

BEWARE OF TICKS THIS SPRING, AMERICAN MEDICAL ASSOCIATION SAYS

From now throughout the summer, ticks in certain areas of the United States will carry Rocky Mountain spotted fever, says an editorial in the Journal of the American Medical Association.

The mortality of the disease throughout the nation averaged 23 per cent in 4,033 cases reported during the period 1939-1946, the editorial points out. Fortunately, two of the new antibiotics, aureomycin and cholromycetin, give promise of being effective in treatment of Rocky Mountain spotted fever.

The important foci of the infection are Wyoming, Montana, Colorado, Virginia, Maryland and North Carolina, according to the editorial. In the West, the majority of cases appear between April and June, and in the East, during July and August. Throughout the nation, more cases occur during July than any other month.

Many cases occur in persons seeking recreation and on vacation in rural or suburban areas, the editorial says. Rocky Mountain spotted fever is characterized by a high fever, muscle pains and a red, spotted rash. Protection against infection lies in preventing the attachment of a tick to the skin. High boots, leggings or socks worn outside the trousers hinder the tick from attaching itself to the leg. If there are no openings in the clothing, however, the tick will crawl up and attach itself on the neck.

In tick-infested country one should pass the hand frequently over the back of the neck and behind the ears to remove ticks that may not yet be attached to the skin. After becoming attached, ticks seldom transfer the infection until they have fed on the victim for several hours. Therefore, inspection of the body and clothing twice daily when in tick-infested country usually is sufficient.

A tick attached to the skin should be removed immediately and as gently as possible. If the tick is pulled off with the fingers, it should be handled with a small piece of paper and the abrasion should be touched gently with a disinfectant such as iodine or gently washed with soap and water.

Vaccines have definite protective value for a period of less than a year, the editorial says. Tourists who go to areas where the infection is present and persons who live in areas where the infection is highly virulent should be vaccinated.

* * * *

GROWTH OF HEALTH COUNCILS SHOWS NATIONWIDE PROGRESS IN RURAL HEALTH

One of the brightest indications of progress in securing more doctors and better health facilities for rural areas

is the announcement by the American Medical Association that community health councils in the nation have increased from 82 to nearly 300 in the last two years.

These figures are based on a recent survey of the association's Council on Medical Service in which county medical societies were queried, Thomas A. Hendricks of Chicago, secretary of the council, said.

Local achievements of the community health councils in the last five years include construction of hospitals with the aid of Hospital Survey and Construction Act (Hill-Burton Act); increasing available hospital beds; developing clinics; securing more doctors, dentists, nurses and other needed personnel; development of full-time local public health services; health examination of children of school and pre-school age and correction of their remediable health defects; promotion of voluntary prepayment medical care and hospitalization; provision of medical care for the aged and chronically ill, and meeting costs of medical service to families unable to pay for hospitalization and doctors' bills, according to Mr. Hendricks.

Some community councils have been extremely helpful in cooperating with the national mental health program. Councils have matched government funds to pay mental health clinic personnel and conducted educational campaigns to acquaint communities with the value and manner of operation of the clinics.

Although health councils have been organized in urban as well as in rural areas, they have been especially important in bringing better medical care to the people of the rural communities.

The A.M.A.'s efforts to promote organization of community health councils to improve medical care for rural communities date back to the organization of the association's Committee on Rural Health five years ago. Since that time it has been actively engaged in coordinating the efforts of farm groups and state and local medical societies in rural health.

SCHOOL OF PHARMACY

The committee is set up so that its representatives can be reached locally in any area. Doctors selected by state medical societies serve as directors in nine regions and as state rural health chairmen in 45 states. Any organization wanting information on setting up a local health council or solving rural health problems may contact one of the representatives or write directly to the A.M.A. Rural Health Committee in Chicago.

Dr. F. S. Crockett of Lafayette, Ind., is chairman of the Rural Health Committee, and a subcommittee of four doctors forms the executive body. Representatives of the American Farm Bureau Federation, the Grange, the Farm Foundation and other farm organizations make up an advisory committee.

Suppose members of the Farm Bureau in Ohio write the A.M.A. that a community needs a doctor and does not have the facilities to attract him. The community wants to build and staff a health clinic with aid from the Hospital Survey and Construction Act. What happens?

The explanation comes from Dr. Crockett. The information is referred to the regional director who takes the matter up with the state rural health chairman and the state medical society. The state chairman and the medical society contact the Farm Bureau, a meeting is called, and the state chairman and representatives of the state and local medical societies, farm organizations and civic groups get together at the community level to work out the problem.

That the rural health problem is steadily being solved through cooperative community efforts was generally agreed at the recent (Feb. 3-4) fifth annual Conference on Rural Health in Kansas City, Mo. The conference, sponsored by the Committee on Rural Health in cooperation with farm organizations, brought together more than 500 medical and lay leaders concerned with providing medical care to small communities.

USE PENICILLIN TO PREVENT RHEUMATIC FEVER RECURRENCE

Encouraging results from use of peni-

cillin to prevent recurrence of rheumatic fever in children are reported by a Chicago research group.

"The recurrence rate was zero in the penicillin-treated group compared with 11 and 19 per cent in control groups," Kate H. Kohn, M.D., Albert Milzer, Ph.D., and Helen MacLean, A.B., of Michael Reese Hospital say. Their study appears in the Journal of the American Medical Association.

Rheumatic fever commonly affects children and often results in permanent and serious damage to the heart. The disease is related to infection of the upper respiratory tract with streptococcus microbes.

All the children studied had recovered from an acute attack of rheumatic fever and were living in their own homes and attending public school.

"They present a different problem from children residing in the controlled atmosphere of the hospital or convalescent home, not only because they are exposed to infections prevalent in the general community, but also because medical care, especially of seemingly mild upper respiratory infections, frequently is delayed," the researchers say.

A hundred and twenty-six children were chosen and divided into two groups equal in sex, race, age and economic level. One group received penicillin tablets for periods covering a week or more of each month during three school years. The second group received no medication. A third and comparable group also was used as a control.

The penicillin was effective in significantly reducing the incidence of streptococcal infections in the throats of the children, the researchers found.

This observation and the difference in recurrence rates in the penicillin-treated groups and the non-treated groups are "sufficiently encouraging to warrant continued study," the researchers say.

REHABILITATION TRAINING EN- ABLES SEVERELY PARALYZED PATIENTS TO WALK

More than half of a group of patients with paralysis of both arms and both

legs have learned to walk again at Bellevue Hospital, New York.

The success of this modern rehabilitation program is described in the *Journal of the American Medical Association* by Drs. Samuel S. Sverdlik and Howard A. Rusk of New York University College of Medicine.

"All the patients had pathologic conditions of the spinal cord due to trauma (wound or injury) or disease," the doctors say. "The 23 cases included 10 of traumatic origin, three from arthritis, and three from poliomyelitis.

"The onset of disability on admission to the Rehabilitation and Physical Medicine Service varied from five to 25 years. The average stay was 21½ weeks. This was not all actual training time, as many patients remained on the wards because of home and housing problems. The actual rehabilitation training time necessary to maximum improvement was 12 weeks.

"Before instituting any rehabilitation program, tests are necessary to evaluate the extent of the disability. On the basis of the total evaluation data, the patient is placed on a five-hour training program.

"Physical therapy in the form of heat is usually used prior to any exercise session. Water gymnastics, electrical stimulation of muscles and ultra-violet radiation are all valuable. Occupational therapy is prescribed for both its psychologic and physiologic values.

"Special training routines are instituted to teach the patient how to roll from side to side in bed and how to sit up in bed. Mat exercises, push-ups on the mat, wall pulleys and similar exercises are added at opportune times.

"The final results may be evaluated as follows: Of the 23 patients, 13 became ambulatory; five of the 13 did not require any braces. Of the remaining 10, five became wheelchair independent and three required assistance in getting into and out of their wheelchairs. Two remained primarily bed and limited wheelchair patients.

"Eighteen were considered employable. Eight are presently working and one is attending college.

"Quadriplegia (paralysis of both arms and both legs) is one of the most severely disabling physical disabilities encountered in the practice of medicine. However, when the modern techniques of rehabilitation are used, the attitude of hopelessness and futility is not justified."

WARN OF DANGER FROM CLEANING FLUID VAPOR

Severe poisoning may result from inhaling vapors of noninflammable cleaning fluids, according to three doctors of the General Electric Company.

The warning was contained in an article in *Archives of Industrial Hygiene and Occupational Medicine*, published by the American Medical Association.

Carbon tetrachloride, a solvent used in the fluids, is highly poisonous when breathed as a concentrated vapor or taken internally as a liquid, Drs. W. D. Norwood, P. A. Fuqua and B. C. Scudder of the Hanford Works, Richland, Wash., said.

(Dr. Walton Van Winkle, Jr., Chicago, secretary of the Therapeutic Trials Committee of the A.M.A.'s Council on Pharmacy and Chemistry, said that most of the noninflammable types of cleaning fluid are carbon tetrachloride.)

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PLAN STUDY OF PESTICIDES' EFFECTIVENESS AND SAFETY

Studies to determine the effectiveness and safety of pesticides are planned by the American Medical Association Joint Committee on Pesticides, Bernard E. Conley, R.Ph., of Chicago, committee secretary, announced.

This decision is the outgrowth of a recent meeting in the A.M.A. headquarters in Chicago. The meeting was attended by representatives of the A.M.A. Council on Pharmacy and Chemistry and Council on Foods and Nutrition, the Federal Food and Drug Administration, state departments of public health, private and industrial toxicological laboratories and research institutes and trade associations.

The committee, a branch of the

A.M.A. Council on Pharmacy and Chemistry, will coordinate various medical activities interested in the pesticide problem and assist physicians and pharmacists in overcoming the difficulties which new pesticides present, Mr. Conley said.

"The committee hopes to meet this problem with its planned program," he said. "It was the conclusion of the conference that the committee could best serve medicine and the public by undertaking these immediate objectives:

- "1. Establish safe standards for use.
- "2. Foster development of prophylactic and antidotal measures.
- "3. Stimulate voluntary control.
- "4. Assist in standardization of nomenclature.
- "5. Accumulate and evaluate new information.
- "6. Implement an intensive educational program."

The committee is particularly interested in development of well organized and carefully planned studies to determine the usefulness of pesticides and their harmful possibilities, Mr. Conley pointed out.

"While pesticides can be safely and effectively used, careless use and lack of understanding can precipitate tragedies," he said.

"Information that the committee gains will be disseminated through A.M.A. facilities. Control of this problem requires participation by many interests. Voluntary control is important and the joint committee will encourage it by bringing health problems to industry's attention and suggesting possible ways for their correction."

* * * *

PIGMENTED MOLES MAY BECOME CANCERS

Black and brown moles may develop into one of the most malignant and rapidly fatal forms of cancer. Blue-black moles are already malignant.

All pigmented moles should be carefully examined by a doctor, emphasizes Dr. S. William Becker of Chicago in Archives of Dermatology and Syphilo-

logy, published by the American Medical Association.

Even doctors sometimes have difficulty in determining whether some of these growths are harmless, he points out.

Pigmented moles appearing after infancy or in locations where they are likely to be irritated or injured are especially likely to become cancerous, he says.

This type of cancer is known medically as malignant melanoma, Dr. Becker explains.

"A recently appearing single brown lesion is usually lentigo maligna, which constitutes the early state of malignant melanoma," he says. "Such a lesion should be excised surgically.

"Nevi (moles) which have enlarged, have become ulcerated, or have darkened should also be treated by surgical excision. The blue-black lesion is already a malignant melanoma and should be treated as such."

If the doctor's examination indicates that a pigmented mole should be removed it may be destroyed by surgery, the electric needle, or other methods.

* * * *

AMERICAN MEDICAL ASSOCIATION SETS UP MICROBIOLOGIC LABORATORY

Announcement of the establishment by the American Medical Association of a microbiologic laboratory was made by Dr. George F. Lull, Chicago, secretary and general manager.

The laboratory, located in the Chicago headquarters of the A.M.A. (535 North Dearborn street), will be in the charge of Velma L. Chandler, Ph.D., bacteriologic associate. It will be a section of the Division of Therapy and Research.

"The microbiologic laboratory will investigate the biologic, bacteriologic, immunologic and antibiotic properties of various products which are offered to the medical profession and to the public," said Dr. Chandler.

"In addition to drugs, these include foods, cosmetics, germicides, antiseptics, beverages, serums and vaccines. The safety of these products for human use will be determined.

RESIDENT LIVE BIRTHS, INFANT DEATHS AND MATERNAL DEATHS, WITH RATES PER 1,000 LIVE BIRTHS: UNITED STATES AND EACH STATE, 1948

(Place of Residence)

	LIVE BIRTHS		INFANT DEATHS		MATERNAL DEATHS	
	Number	Rate Per 1000 Pop.	Number	Rate Per 1000 Live Births	Number	Rate Per 1000 Live Births
United States	3,535,068	24.2	113,169	32.0	4,122	1.2
Alabama	85,372	29.4	3,228	37.8	194	2.3
Arizona	19,195	27.3	1,083	56.4	25	1.3
Arkansas	48,036	24.8	1,363	28.4	100	2.1
California	240,702	23.2	6,885	28.6	206	0.9
Colorado	33,010	27.5	1,267	38.4	32	1.0
Connecticut	42,229	21.2	1,026	24.3	25	0.6
Delaware	7,254	24.2	214	29.5	8	1.1
Dist. of Columbia	20,815	24.1	531	25.5	19	0.9
Florida	59,600	24.5	2,103	35.3	115	1.9
Georgia	92,694	29.3	3,169	34.2	198	2.1
Idaho	16,132	27.5	481	29.8	13	0.8
Illinois	184,871	22.1	5,123	27.7	151	0.8
Indiana	92,529	23.6	2,760	29.8	92	1.0
Iowa	60,575	23.2	1,610	26.6	47	0.8
Kansas	42,714	22.5	1,151	26.9	35	0.8
Kentucky	77,176	27.0	3,073	39.8	116	1.5
Louisiana	73,312	28.3	2,779	37.9	121	1.7
Maine	22,071	24.6	706	32.0	18	0.8
Maryland	53,423	24.8	1,537	28.8	49	0.9
Massachusetts	97,389	21.0	2,613	26.8	73	0.7
Michigan	154,730	24.9	4,639	30.0	118	0.8
Minnesota	72,780	24.8	1,959	26.9	48	0.7
Mississippi	65,303	30.9	2,474	37.9	169	2.6
Missouri	85,258	21.9	2,585	30.3	91	1.1
Montana	15,035	29.4	461	30.7	14	0.9
Nebraska	31,176	24.3	835	26.8	22	0.7
Nevada	3,694	22.5	147	39.8	6	1.6
New Hampshire	12,423	23.8	361	29.1	15	1.2
New Jersey	97,580	20.5	2,585	26.5	74	0.8
New Mexico	20,519	35.9	1,438	70.1	49	2.4
New York	301,966	21.2	8,258	27.3	257	0.9
North Carolina	109,430	28.8	3,858	35.3	207	1.9
North Dakota	16,584	28.5	487	29.4	16	1.0
Ohio	186,353	23.8	5,693	30.5	159	0.9
Oklahoma	50,386	22.0	1,731	34.4	57	1.1
Oregon	35,206	21.5	897	25.5	15	0.4
Pennsylvania	227,227	21.7	6,442	28.4	229	1.0
Rhode Island	16,861	22.6	444	26.3	22	1.3
South Carolina	57,759	29.1	2,331	40.4	137	2.4
South Dakota	16,405	26.8	525	32.0	17	1.0
Tennessee	82,127	25.8	3,098	37.7	144	1.8
Texas	197,750	26.8	9,131	46.2	301	1.5
Utah	20,714	30.9	568	27.4	12	0.6
Vermont	9,369	25.8	271	28.9	9	1.0
Virginia	82,057	26.9	3,163	38.5	113	1.4
Washington	55,833	22.7	1,537	27.5	29	0.5
West Virginia	52,396	27.4	2,108	40.2	60	1.1
Wisconsin	81,630	24.7	2,148	26.3	87	1.1
Wyoming	7,418	26.0	293	39.5	8	1.1

Source: National Office of Vital Statistics.

LIVE BIRTHS, INFANT DEATHS, AND MATERNAL DEATHS WITH RATES PER 1,000 LIVE BIRTHS: NORTH CAROLINA AND EACH COUNTY, 1949*

(Place of Residence)

COUNTY	TOTAL LIVE BIRTHS	INFANT DEATHS			MATERNAL DEATHS		COUNTY	TOTAL LIVE BIRTHS	INFANT DEATHS			MATERNAL DEATHS	
		No.	No.	Rate	No.	Rate			No.	No.	Rate	No.	Rate
N. Carolina	106,568	4,039	37.9	128	1.2		Johnston	1,787	75	42.0	4	2.2	
Alamance	1,784	39	21.9	..	..		Jones	357	16	44.8	1	2.8	
Alexander	386	9	23.3	1	2.6		Lee	691	22	31.8	1	1.4	
Alleghany	142	4	28.2	..	..		Lenoir	1,266	57	45.0	3	2.4	
Anson	814	35	43.0	2	2.5		Lincoln	717	20	27.9	..	..
Ashe	573	21	36.7	..	..		McDowell	619	11	17.8	..	..
Avery	400	11	27.5	2	5.0		Macon	375	16	42.7	..	..
Beaufort	1,050	70	66.7	..	..		Madison	440	24	54.5	..	..
Bertie	770	44	57.1	1	1.3		Martin	785	31	39.5	1	1.3	
Bladen	907	50	55.1	1	1.1		Mecklenburg	5,204	180	34.6	1	0.2	
Brunswick	515	18	35.0	3	5.8		Mitchell	389	12	30.9	..	..
Buncombe	2,832	94	33.2	5	1.8		Montgomery	429	9	21.0	..	..
Burke	1,076	22	20.4	..	..		Moore	847	21	24.8	2	2.4	
Cabarrus	1,521	45	29.6	1	0.7		Nash	1,749	94	53.7	4	2.3	
Caldwell	1,233	47	38.1	3	2.4		New Hanover	1,568	59	37.6	1	0.6	
Camden	143	10	69.9	1	7.0		Northampton	841	28	33.3	..	..
Carteret	585	15	25.6	1	1.7		Onslow	781	33	42.3	3	3.8	
Caswell	598	21	35.1	..	..		Orange	819	16	19.5	..	..
Catawba	1,666	60	36.0	1	0.6		Pamlico	267	15	56.2	2	7.5	
Chatham	659	19	28.8	..	..		Pasquotank	697	27	38.7	..	..
Cherokee	470	25	53.2	..	..		Pender	527	26	49.3	..	..
Chowan	387	24	62.0	1	2.6		Perquimans	229	8	34.9	..	..
Clay	144	3	20.8	..	..		Person	762	19	24.9	1	1.3	
Cleveland	1,808	58	32.1	5	2.8		Pitt	1,831	79	43.1	3	1.6	
Columbus	1,534	88	57.4	4	2.6		Polk	220	7	31.8	..	..
Craven	1,448	56	38.7	2	1.4		Randolph	1,221	29	23.8	3	2.5	
Cumberland	3,303	120	36.3	3	0.9		Richmond	1,134	46	40.6	1	0.9	
Currituck	112	3	26.8	..	..		Robeson	2,801	152	54.3	1	0.4	
Dare	108	4	37.0	..	..		Rockingham	1,568	53	33.8	2	1.3	
Davidson	1,453	54	37.2	..	..		Rowan	1,595	63	39.5	2	1.3	
Davie	346	16	46.2	..	..		Rutherford	1,186	31	26.1	2	1.7	
Duplin	1,184	43	36.3	2	1.7		Sampson	1,373	56	40.8	1	0.7	
Durham	2,374	72	30.3	2	0.8		Scotland	815	50	61.3	3	3.7	
Edgecombe	1,545	78	50.5	3	1.9		Stanly	914	33	36.1	..	..
Forsyth	3,575	118	33.0	4	1.1		Stokes	467	14	30.0	..	..
Franklin	722	21	29.1	3	4.2		Surry	1,274	45	35.3	..	..
Gaston	2,874	81	28.2	3	1.0		Swain	286	9	31.5	1	3.5	
Gates	228	13	57.0	..	..		Transylvania	394	5	12.7	2	5.1	
Graham	200	6	30.0	..	..		Tyrrell	136	141	02.9	..	..
Granville	830	42	50.6	..	..		Union	1,081	46	42.6	..	..
Greene	570	19	33.3	2	3.5		Vance	848	52	61.3	2	2.4	
Guilford	4,305	120	27.9	1	0.2		Wake	3,337	127	38.1	3	0.9	
Halifax	1,963	86	43.8	8	4.1		Warren	743	37	49.8	7	9.4	
Harnett	1,251	39	31.2	..	..		Washington	360	17	47.2	1	2.8	
Haywood	1,024	36	35.2	..	..		Watauga	486	11	22.6	..	..
Henderson	743	20	39.0	..	..		Wayne	1,566	68	43.4	2	1.3	
Hertford	521	28	53.7	..	..		Wilkes	1,142	42	36.8	..	..
Hoke	438	31	70.8	..	..		Wilson	1,561	91	58.3	3	1.9	
Hyde	163	3	18.4	..	..		Yadkin	519	9	17.3	..	..
Iredell	1,436	53	36.9	..	..		Yancey	438	17	38.8	..	..
Jackson	413	14	33.9	..	..						

*Data are provisional receipts through February 1950 for 1949 occurrences.



The

Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

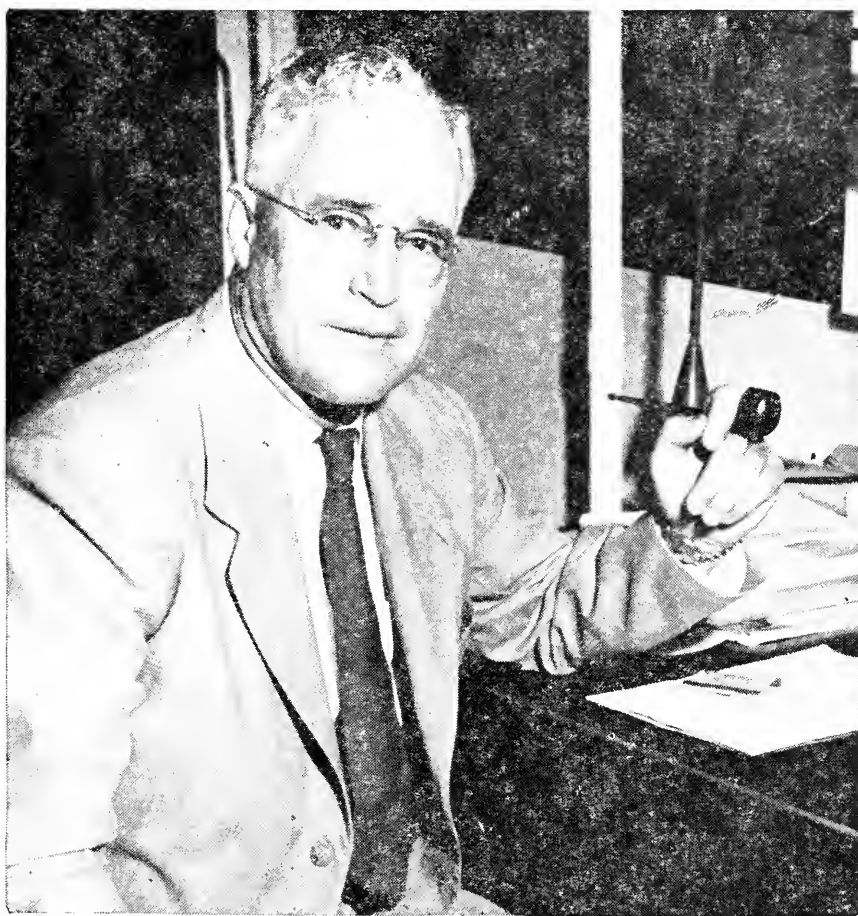
| This Bulletin will be sent free to any citizen of the State upon request |

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

JUNE, 1950

No. 6



STATE HEALTH OFFICER REPORTS

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
Appendicitis	Infantile Paralysis	Typhus Fever
Cancer	Influenza	Venereal Diseases
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Epilepsy—Feeble-mindedness. Mental Health and Habit Training
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
Prenatal Letters (series of nine monthly letters).	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
The Prevention of Infantile Diarrhea.	One to Two Years.
Breast Feeding.	Two to Six Years.
Table of Heights and Weights.	Instructions for North Carolina Midwives.
Baby's Daily Schedule.	Your Child From One to Six
	Your Child From Six to Twelve
	Guiding the Adolescent

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

1950 CONJOINT SESSION REPORT A MID-CENTURY REVIEW*

By J. W. R. NORTON, M. D.

Secretary and State Health Officer

Pinehurst, North Carolina

May 3, 1950

The State Board of Health is a child of the State Medical Society in North Carolina. From its birth in 1877 the Society has nurtured and guided this child which has a reasonable record of obedience, respectfulness and of growing up to do its share in the increasingly important job of combatting disease and injury and promoting health in our State. So, at this Conjoint Session each year it is not only legally required but morally fitting and ethically appropriate that the parent should be kept advised as to the progress of the child. The same relationship has existed between our local health departments and their respective county medical societies, beginning with Guilford in 1911. We take pride in this fine relationship through several generations between organized medicine in North Carolina and the State Board of Health and local health departments. As our respective jobs become more complicated and difficult in preventive and curative medicine and as the public obtains better pay, food, clothing, housing, and medical care and passes through the stage of a "little learning" with regard to some of these and becomes more critical there is need—a necessity—for an ever-increasing spirit of cooperation among

those in medical and allied fields. The remnants of suspicion, distrust and jealousy must be replaced by confident cooperation among all medical and health workers with our only goal the improvement of medical care and health of the individual and public. The fine relationship that exists between public health workers and organized medicine in North Carolina constitutes a vital factor in forestalling socialized medicine. By building deserved confidence on the part of the people—confidence that we in public health will keep them protected from preventable disease and injury and the things that cause them, and confidence that those engaged in private practice are moved by humanitarian motives and will not let them down, we place ourselves in a position where we can hold any semblance of socialism at bay and protect free enterprise in medicine.

As we pause for reflection at the mid-century mark we observe the many gains which, as co-workers in preventive and curative medicine we have made together. In humility, however,

*Summary of health activities in North Carolina before the Conjoint Session of the State Board of Health and the 96th Annual Session of the State of North Carolina.

we must admit little or no gain against some, such as poliomyelitis, mental diseases and accidents and increasing mortality shifts to the degenerative diseases, such as diseases of the heart and blood vessels, cancer, nephritis, and diabetes. Many factors, however, must guide our plans and work other than mortality statistics since communicable diseases tend to increase promptly if we lower our guard.

Public health workers and private practitioners—taking full advantage of improvements in research, teaching, hospitals, drugs and antibiotics and the cooperation of allied dental, nursing and veterinary professions—have reduced almost to eradication many former leading killers. During the half century life expectancy at birth has been increased almost twenty years. Maternal and infant mortality have been greatly reduced. The physically crippled, blind, deaf and mental cases are receiving vastly improved care. Most public health services are rendered by local health departments and state coverage moved gradually to completion from 1911 to 1949. Our mortality and morbidity statistics are dependable only for the last thirty-five years or less. Since 1916 the following reductions in mortality have been accomplished:—

Pneumonia	50%
Infant	62%
Maternal	74%
Tuberculosis	74%
Whooping Cough	90%
Infantile Diarrheas	90%
Diphtheria	93%
Typhoid	99% (700-6)

In his chronological history of the State Board of Health published in the biennial reports, Dr. G. M. Cooper disposes of 1900 thus:—

“1900. State Board of Agriculture, on request of the State Board of Health, agreed to examine samples of water from public water supplies until Board of Health could provide its own examiner. Annual appropriation for State Board of Health \$2,000.”

Increased space has been taken up with this chronological report, from year to year, until several pages are now

necessary to give the barest outline of yearly progress.

The State Medical Society officers, the Board of Health, the Governor, legislative and volunteer leaders worked together and the 1949 General Assembly provided additional funds, particularly for cancer control, nutrition, a new \$600,000 Health Building and for strengthening local health departments.

The fourteen divisions which grew up during many years were consolidated and functionally related activities were integrated into six divisions, exclusive of Central Administration, effective February 1, 1950.

The Division of Personal Health, with Dr. G. M. Cooper as Director, contains sections devoted to maternal and child health, crippled children, nutrition, cancer, and heart disease. Definite progress is expected from activities of the prematurity program now well underway. 2308 prenatal and infant clinics were held during 1949. 11,515 visits were made to 287 crippled children's clinics, with 1178 admissions to hospitals. Cancer centers have been set up in Wilmington, Winston-Salem, Asheville, Greensboro, Kinston, Elizabeth City, Sylva, Wilkesboro, Rocky Mount and Durham. Cancers are being found early and a diagnosis in a curable stage is gratifying. Screening tests to find cancer and other diseases early are available to the public; treatment arrangements are based on ability to pay. One of the great needs is for simple dependable multiple screening technics to make case-finding in the field of chronic illness more effective and economical for all concerned. In Harnett County this year concurrent blood sugar and chest X-rays were run satisfactorily. The nutrition service continued to grow in educational activities, in building better bodies and in favor with physicians and laymen alike. Consultation service was provided the Medical Care Commission in developing food service plans for hospitals.

The Local Health Division is directed by Dr. C. C. Applewhite. It has sections devoted to administration, public health nursing, mental health, health education and health of the school age child.

More and more emphasis is being placed on strengthening local health departments and for the first time, July 1, 1949, all 100 counties voted appropriations. The 1076 budgeted full-time positions, when all are filled, will be able to provide relatively minimum services except in the cities, where more nearly adequate services are available. The present fiscal year budget for local health departments shows:—total \$4,-372,629, Local \$2,693,246, State \$1,150,000, Federal \$529,383. This local contribution of over 60 per cent is evidence of what taxpayers think of their local health departments. The mental health program is designed to cooperate with the mental hospitals somewhat as we work with the tuberculosis hospitals in case-finding and follow-up particularly through our nurses and health educators. The School Health Coordinating Unit has had the wholehearted cooperation of Dr. Clyde Erwin and the local school superintendents. Broad, flexible policy plans were made by the State providing an opportunity for local adaptations according to need. The Legislature voted \$550,000 to the Board of Education and the Board of Health allocated \$326,211 general health funds for the School Health Program. This increased investment in better health for our 870,000 school children will pay dividends through promotion of better quality in our most valuable crop.

The Division of Epidemiology is directed by Dr. C. P. Stevick, and has sections devoted to public health statistics, acute communicable diseases, venereal diseases, tuberculosis, industrial hygiene and accident prevention. The birth rate declined in 1949 as was to be expected but remained higher than before and during the war. The crude provisional death rate was 8.1 per 1000 population. This has shown no persistent decline for several years showing that we have reached an equilibrium between declining communicable disease deaths and increasing deaths from degenerative diseases and accidents. A decrease in all major communicable disease problems, including venereal diseases, except gonorrhea, was recorded

and malaria and pertussis are establishing a new record low. Rocky Mountain spotted fever, tularemia and undulant fever have continued an upward trend for four years. The last Legislature made appropriations which should wipe out the long waiting lists of our tuberculosis hospitals. Our mass surveys showed 2,417 cases of adult type infection in 257,415 project films from twenty counties. Industrial Hygiene units X-rayed 1,842 employees in dusty trades and engineering surveys of occupational hazards were conducted in 308 plants.

The Division of Sanitary Engineering is directed by Mr. J. M. Jarrett. Services are rendered in environmental sanitation, public eating places, milk, bedding, shellfish, insect and rodent control, and engineering. Work is underway on studies and investigations of industrial wastes under the provisions of the recent Federal Stream Sanitation Law. Under the continued consultation and supervisory services new water and sewage treatment facilities have been initiated at an estimated cost of \$5,-000,000. Considerable time was devoted to the promotion of sanitary disposal of garbage and refuse and the 18 sanitary landfills now in operation for such disposal. Much time has been given to special work on projects in cooperation with the Medical Care Commission:—186 plans for new hospitals were reviewed; 349 inspections were made of institutions, a majority of which were hospitals. Concentrated efforts were given to rural sanitation problems and in assisting local health departments, as well as those connected with FHA developments. Training programs for local sanitarians were started and approximately 50 local sanitarians were trained during the year.

The Laboratory of Hygiene Division is directed by Dr. John H. Hamilton, and provides services as follows:—biology, microscopy, cultures, serology, water, chemistry and approved laboratories. There was an increase in the number of examinations of all types of specimens, except for serological tests for syphilis. The Laboratory now is

equipped to perform complement fixation tests on the rickettsial diseases (murine typhus, Rocky Mountain spotted fever, rickettsialpox and "Q" fever) and on the following diseases:—eastern equine encephalomyelitis and lymphocytic choriomeningitis. Chicken red cell agglutination inhibition reactions for the determination of antibodies to influenza will be performed upon blood specimens when both acute and convalescent specimens are submitted. Beginning in July, 1949, a cytology service was added for women examined in the Cancer Clinics and 642 were examined. More children now are protected against diphtheria, tetanus and pertussia than formerly, and the tendency is from use of monovalent antigens to multivalent antigens.

The Division of Oral Hygiene is directed by Dr. Ernest A. Branch, and is devoted to oral health education, consultation, correction and prevention. The Division slogan is "Prevention Through Education." During 1949 the mouths of 76,706 children were inspected and dental corrections were made for 33,916 under-privileged in this group, while the others were referred to their own dentists. The topical application of sodium fluoride is included in the services rendered underprivileged children at the schools and to the others by private dentists in their offices. Dr. Branch reports that, "while we believe there is virtue in this treatment, it should be understood that this is only one of several preventive measures. We would still put the emphasis on regular visits to the dentist, and adequate diet, low in sugars and starches, and proper and regular brushing of the teeth."

In the Central Administration Division, directed by the State Health Officer, we have public relations, budget, personnel, printing, mailing and central files. For many years now, the State Board of Health has been endeavoring through the press, over the radio, and on the platform, to justify the confidence the people repose in it and in their private physicians, dentists, nurses and hospitals. The local

health departments also, with the means of their command, are building up good public relations. We stand ready to carry our share of the load with organized medicine in efforts to maintain and strengthen public understanding of, and confidence in, the medical profession as a means of conquering disease, prolonging human life and promoting happiness. I add happiness because I realize, as you do, that sickness and happiness are incompatible. It is not enough for a worthy cause to "sell itself;" it must justify itself in the eyes of those it serves and prove by demonstration they cannot get along without it. Both curative medicine and preventive medicine are indispensable, and we must continue our cooperative efforts to make the public conscious of this fact. I think the people have good cause to have greater confidence in the medical profession than at any time in our history, and I think they are becoming more health conscious with each passing year, and with the discovery of each new preventive and curative agency.

In making this Conjoint Session Report, I have assumed that after providing a copy of the detailed voluminous report you would prefer that I give a few of the highlights of the past year and that we contemplate together some of the vast undercurrents that tend to shape our lives—particularly those that physicians are most competent to guide. We must be ever mindful that the public welcomes medical leadership but will not tolerate dictation. Business fluctuates between a buyer's and seller's market but the man who pays the bills wants a vote.

Public health in North Carolina, as sponsored and guided by the State Medical Society and with six physicians on the Board of nine, has served all the people and excluded no minority group. Inspections, screenings, referrals, environmental sanitation, health education, laboratory services, immunizations have been for the public and not limited to the indigent. We have provided cooperative and supplementary work but we have kept out of the field of

private practice. All of us recognize that there are justifiable areas for use of tax funds in medical, hospital and health care and that appropriate services promote good public relations for organized medicine. In addition to controlling communicable diseases, we are directing efforts against maternal and infant mortality and morbidity, against physical crippling, blindness, deafness, mental illness, accidents, and toward a more healthful physical and emotional environment. We cannot ignore the increasing toll of degenerative diseases which now, with mental diseases and accidents, account for far more than half of our deaths. They too require a concerted attack by preventive and curative medicine, working hand-in-hand. Every home in our State stands under a threat from their ravages. These stubborn and unconquered enemies will eventually yield to our concerted attack as we strive unselfishly to make life better as well as longer in North Carolina. I have complete and unbounded faith in the medical profession in its entirety and in all branches of it and I am sure that we can work out a program in this non-communicable disease field that will be

ethical, acceptable, and effective, encroaching upon the prerogatives of none, and that in so doing we shall win the respect, cooperation and gratitude of all good citizens in this State.

This oral report to you has been the merest outline, as it would be impractical to take up so much of your time with the details contained in the more voluminous documents which have been placed at your disposal. I wish it were possible to mention every activity and to commend each one on the central staff and in each local department and each unselfish volunteer citizen who has worked so faithfully and so well. I am grateful to each one. And to you, fellow members of the medical profession, I extend my hearty and sincere thanks for the loyal support you have given to our joint program. Let us all together pledge our best efforts to a constant study of our medical and health problems and to an unselfish pooling of all our resources in our ever-continuing and increasing efforts against disease, injury and death and for the promotion of abundant health.

Respectfully submitted,

J. W. R. Norton, M. D.,

Secretary and State Health Officer

DEPARTMENTAL REPORTS

North Carolina State Board of Health

(January 1, 1949 — December 31, 1949)

DIVISION OF PREVENTIVE MEDICINE—G. M. Cooper, M. D., Director

During the calendar year of 1949, the Division of Preventive Medicine consisted of the Maternal and Child Health Service, which embraced a comparatively new program, namely, the extensive and expensive work for prematurely born babies, the Crippled Children's Service, the mailing room, the multilith department, and the personal health service. In order to set forth in as few words as possible the highlights of the activities of the department, it is divided into the subjects as just enumerated.

First, the Maternal and Child Health Service. This section of the divisional work was carried on with the aid of Dr. Robert J. Murphy, pediatrician, and with the help which might be designated the executive staff of the department, one chief secretary, one senior general clerk stenographer, one file clerk, one accounting clerk, four clerks in the mailing room, and an expert operator in the multilith department with one assistant. Field work was aided to some extent by one maternal and child health nurse. Two nurses who did work largely for the regulation of midwife work in cooperation with the various counties

who desired the service. One nurse, Miss Flora Ray, with a record of more than twenty-five years' service was placed on the retirement list in November on account of ill health incident to advancing age.

During the year, 2308 maternity and infancy clinics were held. These clinics were actively held in more than two-thirds of the State's counties. In order to illustrate the scope and caliber of this work, the following figures are set forth describing this general work. It will be noted on reading these figures that the 9813 women attending the prenatal clinics held for expectant mothers represented about two-thirds of all the cases delivered by midwives during the year. The figures follow:

Attendance—

	White	Colored	Indian	Total
Prenatal	976	8797	40	9813
Postpartum	385	2417	8	2810
Infant	2335	8945	27	11307
Preschool	3145	5626	20	8791

Many thousands of copies of specially prepared booklets on the thousands of questions dealt with were given these women, expectant mothers or mothers of babies brought to the clinics for the regular monthly examinations and checking for well babies.

The mailing room department of the State Board of Health included in this division maintained its usual standard of extensive work, as illustrated by the figures quoted below:

Literature distributed—

Health Education	1,591,715
Prenatal Literature	23,944
Infant Literature	100,414
Miscellaneous supplies	67,416
Miscellaneous midwife supplies	6,530

As stated in the preliminary statement of the department work, a comparatively new activity was inaugurated early in the year known as the Premature Infant Care Program. The annual deaths recorded by the Vital Statistics Department for prematurely born babies have indicated that at least 5,000 babies die annually on account of being born prematurely. In other words, through many years of intensive effort, educa-

tional, and through personal service, the clinics conducted for more than twelve years, there has been a notable decrease in the infant as well as maternal death rate in North Carolina. All of this has been marked with the exception of the deaths from prematurely born babies. It has been estimated that for the last three or four years about one-third of the deaths of infants under one year of age has been due to being born prematurely. It is an effort to conserve and save the lives of such babies that this work has been inaugurated. Naturally, it has entailed the expenditure of a great deal of money. In the first place, a few centers in hospitals within reach of most of the people of the State had to be re-equipped in the preparation of the pediatric department for care of these babies. At the close of the year, four hospitals were receiving these babies, one each at Asheville and Winston-Salem and two at Durham. Two other hospitals were at work to prepare for opening the premature center. To properly conduct these departments requires specialized training for full time nurses to operate such departments and fully equipped pediatric staff with all of the extras such as available oxygen and other aids provided. It has become necessary to enlist the aid of every county health department through the selection of at least one nurse familiar with the program, and such departments have had to be provided with a modern carrier, which is simply a miniature incubator, for the nurse to use to take such babies to one of the centers if a bed is available, or otherwise to the nearest hospital provided for facilities to care for the baby. The aid of welfare departments has been necessary in order to see that proper homes are provided on the return of the baby, or rather proper care in the homes, and also their aid in the transportation of such babies when ready to be discharged from the hospitals. All of this has entailed the expenditure of a great deal of money. During the year, 523 babies were cared for and the cases closed on 441. The cost of those cases closed was nearly \$200,000. This is men-

tioned to indicate the enormous problems involved in such a program.

Work for Crippled Children: The Crippled Children's Service was very much aided during the year by the addition of two physical therapists. The purpose of this was to enable the specialists to get the children having polio and other crippling ailments out of the hospitals at an earlier date by providing necessary physical therapy treatment in a system of clinics supervised in general by the orthopedic surgeons with the aid of a number of pediatricians. This work proved of great value as an additional service in the Crippled Children's Department. The other employees of the department, included three special nurses, three clerks and one general field worker and a part time clerk in the western section; also, one special medical social consultant. Work in the department moved smoothly and the following statement affords a brief summary of the scope of the work carried on:

The clinics were open to any children under twenty-one years of age for a free orthopedic examination by the clinician in charge. 11,515 visits were made by children to clinics, and the number of clinics held during the year was 287. The total number of children under hospital care during 1949 was 1396, 218 having remained over from 1948. 1178 were admitted to hospitals during the year. 1384 were discharged from hospitals, leaving 12 remaining at the end of the year, to be carried over into 1950. 84 were given convalescent care and 11 boarding home care. 504 appliances were purchased, which included artificial limbs, braces, splints, etc., during the year 1949. There were 552 outstanding authorizations as of December 31, 1949 and 589 applications pending as of the same date.

DIVISION OF LOCAL HEALTH ADMINISTRATION—C. C. Applewhite, M. D., Director

As of December 31, 1949 all of the one hundred counties in North Carolina had developed some type of local health service. This service was provided by

seventy-four local health departments of the following types: fifty-three county departments, eighteen district departments, and three city departments. However, several of these did not meet the minimum requirements for a full-time health department due to shortage of personnel.

The serious shortage of qualified professional personnel available, particularly physicians and nurses for public health work during 1949, continued to give concern.

As of December 31, 1949 there were 1076 full-time budgeted positions with 40 full-time vacancies. Of this number 11 were full-time health officer vacancies, and 15 public health nursing vacancies. (Note: as of April 1, 1950 three of the 11 health officer vacancies have been filled and prospects appear to be favorable for filling a few of the other vacancies).

TRAINING: During 1949 the following personnel received, or were in the process of receiving special training under the varied programs sponsored by the State Board of Health—

Health Officers—scholarships	2
Health Officer—tuition only	1
Health Officers and Division Directors—attending seminars in V. D. Control	21
Other personnel attending V. D. Seminar	5
Public Health Nurses—scholarships	33
Public Health Nurses—orientation at field training centers	46
Public Health Nurses—attending special Extension Courses	28
Public Health Nurses—special courses in orthopedics, tuberculosis, geriatrics, cancer control, mental hygiene, child health and development	101
Consultant and supervising public health nurses attending Duke University for course in Care of Premature Infants	6
Hospital Nurse—special course in premature infant care	1
Sanitary Engineer—scholarship	1
Sanitarians—scholarships	4
Sanitarians—special 8 weeks'	

course at various field training centers	20
Public Health Educators—scholarships	17
Public Health Educators—special courses in heart, tuberculosis, geriatrics, child growth and development	6
Public Health Investigators—special short courses in V. D. Control	12
Nutritionist—scholarship	1
Nutritionist—attending workshop	1
Nutritionist—special courses in geriatrics	3
Laboratory Technician—special training at field training center	1
Statisticians—tuition at State College	2
Apprentice Trainees—assigned to local health departments:	
Health Educators	2
Sanitarians	2
TOTAL	312

Technical consultation and advisory service to local health departments, joint planning with other divisions of the State Board of Health, and cooperative programs with other state agencies and organizations were carried out during the first four and one-half months of the year under the direction of Dr. John H. Hamilton, Acting Director of Local Health Administration. During the latter part of May, Dr. C. C. Applewhite, formerly District Director with the U. S. Public Health Service, became Director of Local Health Administration. The main objectives of the division for the calendar year 1949 were:

1. To encourage the local health departments to execute a sound and sensible generalized public health program.
2. With the increased appropriation made available by the last legislature, to lay particular stress upon the execution of an effective school health program in cooperation with the Department of Education.
3. To achieve the above results, considerable emphasis has been placed upon

securing and training competent personnel to staff the local health departments.

4. To lend every effort towards raising the prestige of local health departments by:

a. Securing reasonably adequate compensation and security of tenure of office.

b. Promoting the improvement of domiciliary facilities of the local health departments by the construction of adequate health centers.

c. By introducing and practicing sound administrative techniques in dealing with local health departments.

The nature and scope of outstanding activities achieved by the Division of Local Health Administration during the past year are as follows:

Public Health Nursing: On January 15 Miss Dorothy Boone was employed, making five public health nurses on the consultant staff, in addition to the Supervising Public Health Nurse. This group has made field visits to local health departments for consultation service to health officers and public health nursing staffs. Special emphasis has been placed on the School Health Program and the Premature Infant Program.

As a part of a continuous staff educator's program, scholarships were given again this year to public health nurses for the series of five-day courses at the University of North Carolina in orthopedics, cancer control, tuberculosis, mental hygiene, and geriatrics. A similar series was offered for negro nurses at North Carolina College including principles of public health nursing, nutrition, child growth and development, mental hygiene, orthopedics and cancer and its control.

In order to keep prepared public health nurses for participation in the mental health program, a new project was started October 20 called Training in Mental Health for public health personnel at the Duke Psychosomatic Clinic. This includes four weekends at Duke from Thursday noon through Saturday noon for a group of three public health nurses.

Health Education: In 1949, continued emphasis was placed on developing the local public health education program through recruitment, training and employment of qualified local public health educators. As of December 31, 1949 there were nineteen local health educators working full time in local health departments serving a total of twenty counties and two cities. Four of the local health educators are employed on school health funds and devote the greater portion of their time to school health work. Two of the health educators are employed by the United States Public Health Service and loaned to local health departments to develop demonstration programs in venereal disease investigation and general public health education.

Two of the six public health educators employed by the State Board of Health continued working in a dual capacity as local public health educators and area health education supervisors. On July 1, Miss Helen Martikainen, Director of Public Health Education, on loan to North Carolina from the United States Public Health Service, took a leave of absence to join the staff of the World Health Organization in Geneva, Switzerland, and one of the area supervisors was made director. Two health educators continued working with the Tuberculosis Control to assist with community organization and the health education aspects of the mass X-ray program. One health educator continued working with the School-Health Coordinating Service, and one health educator jointly employed by the State Health Department and Appalachian State Teachers' College continued teaching health education in the College, as well as assisting in the development of a health education program through the health department in the community where the College is located.

In 1949, the local health educators assisted public health personnel with health education programs to meet the health needs in the local communities. Programs developed in local health departments included: interpretation of

available public health services; organization of neighborhood and community health councils; staff conferences; training courses for foodhandlers and milkhandlers; community study groups, conferences and institutes on various health problems; and planning with civic clubs, home demonstration clubs and other groups for health programs. In the schools, health educators have assisted in; the organization of school health councils; developed health education in-service training programs for teachers; assisted with special health programs; provided health materials and information to teachers; and worked with Parent-Teacher Association groups in planning health programs. The health educators have assisted with the preparation, production, and distribution of health education materials including posters, pamphlets, fliers, reports and exhibits, and have assisted with film showings, radio programs and newspaper articles.

A planned recruitment program was developed in cooperation with the local health educators and eleven fellowships were awarded to persons qualified for one year of graduate study in public health and health education at the School of Public Health, University of North Carolina and the Department of Public Health, North Carolina College, Durham, North Carolina.

The apprenticeship program for prospective public health educators was initiated in September, 1949 when two apprentices were accepted for training and assigned to local health departments for one year of supervised apprenticeship in public health education as preparation for graduate training in public health education.

In-service staff conference meetings for the local and state health educators were held in July and December at the State Board of Health. The local health educators also attended the Annual Working Conference in March 1949, sponsored by the Departments of Public Health Education of the University of North Carolina and North Carolina College.

During the summer months of 1949,

five local health educators and two health educators employed by the State Board of Health attended one-week short courses in special health fields given at the University of North Carolina and North Carolina College. One Supervisor of Public Education attended two weeks of the Family Life Workshop at the University of North Carolina.

The Public Health Education section continued to work with other Divisions of the Board of Health and allied agencies and organizations in health education program planning, development of materials, and orientation and training of public health personnel.

Field Representative Service: Miss Alice Turnage, Field Representative, resigned as of May 22, 1949. The vacancy was filled when Miss Doris Tillery was added to the staff July 15, 1949.

The general plan of giving consultative and advisory service to local health department clerks and secretaries was continued. Whenever possible, the nursing consultants visited the local health departments with the field representatives and their assistance proved most helpful in interpreting reports to the entire staff.

The new statistical report which has been under preparation for the past several years was completed and forms were mailed to the various health departments by the end of the calendar year. It is an annual report instead of a quarterly one, thereby reducing the number of reports required of the local health departments.

Venereal Disease Control: The Venereal Disease Control Program has emphasized case-finding by contact interviewing investigation and the treatment of early syphilis in the two Rapid Treatment Centers, located at Charlotte and Durham. All cases except those upon which it would work an extreme hardship to leave home are referred to the Rapid Treatment Centers by the Local Health Departments and the private physicians.

During the calendar year 1949 the total admissions to the two Rapid Treatment Centers were 6,791, as of December 31, 1949, since the opening of the Centers 48,181 patients have been admitted. Nearly all gonorrhea cases were treated outside of the Centers, either by private physicians or by local health departments. The number of cases of syphilis reported during the year 1949 was 6,699 as compared to 7,313 in 1948. The number of cases of gonorrhea reported during the year 1949 was 16,173 as compared to 14,962 in 1948.

One of the outstanding accomplishments of the year was the development of a filter paper microscopic serologic test for syphilis by the Eastern Medical Center at Durham and the U. S. Public Health Service. This permits the taking of the equivalent of a Kahn test on infants upon merely extracting a drop or two of blood and soaking it on a narrow strip of filter paper which after drying is sent to the Laboratory for analysis. Some 7,000 satisfactory tests have been run to date which indicate that this test will soon enjoy wide-spread popularity.

All venereal disease public health investigators whose services are available to local health departments and private physicians were specially trained at Gallenger Hospital, Washington, D. C. in contact interviewing techniques. In addition, 16 men with a college degree and special training in interviewing techniques, health department procedures, and venereal disease investigation were employed and strategically located to discover and refer for treatment a gratifying number of unknown cases of syphilis and other venereal disease. Two colored men possessing a Masters Degree in health education were employed on an experimental basis in two metropolitan areas to spend half of their time on venereal disease health education and the balance on venereal disease contact tracing. Partial results indicate that when properly trained they are quite efficient in working with their own race.

MENTAL HEALTH PROGRAM—Miss Dorothea L. Dolan, Psychiatric Social Work Consultant; C. C. Applewhite, M. D., Director. (July 1, 1949—December 30, 1949)

Effective July 1, 1949 N. C. State Board of Health was appointed as the North Carolina Mental Health Authority and charged with responsibility for administering the National Mental Health Act. The Mental Health Program was operated as a separate unit until February 1950 when it was organized as a Section of Local Health Administration. The staff consisted of Mrs. Sybil Strider, Secretary; Miss Margaret Moore, Stenographer; and Miss Dorothea L. Dolan, psychiatric social worker lent to North Carolina by Public Health Service Region 3. An advisory group to act in lieu of a staff psychiatrist was appointed. This consisted of Maurice H. Greenhill, M.D., Associate Professor of Neuropsychiatry, Duke University School of Medicine; Lloyd J. Thompson, M.D., Professor, Bowman Gray School of Medicine; and David A. Young, M.D., General Superintendent, N. C. Hospitals Board of Control. These psychiatrists met at monthly intervals with State Health Officer, Director of Local Health Administration and Curtis G. Southard, M.D., Region 3, USPHS to guide development of the program.

The budget of \$152,499 was derived from a federal grant—\$100,200, state appropriation — \$20,000, and matching funds from local communities—\$32,299. This was divided to provide \$96,949 for the establishment or expansion of mental hygiene and child guidance clinics in local communities, \$17,500 for a traveling, state operated mental health clinic, \$8,500 for public education for mental health \$14,100 for training of professional workers, and \$15,450 for administration.

Provision was made for the following clinical services in local communities:

Mental Hygiene Clinic—Asheville

" " " —Charlotte

Child Guidance Clinic—Wilmington

" " " —Raleigh

" " " —Durham

Child Guidance Clinic—Duke Hospital

Psychosomatic Clinic—Duke Hospital

Mental Hygiene Clinic—Greensboro

Neuropsychiatric Clinics — Baptist Hospital, Winston-Salem

Mental Health Nurse—Charlotte City Health Department

School Social Worker — Winston-Salem

Each clinic observes a sliding scale of fees and accepts patients without discrimination based on color or place of residence. Greensboro was not able to recruit staff during this six months; Wilmington closed when its psychiatrist moved to another state. The seven clinics in Asheville, Charlotte, Raleigh, Durham, and Winston-Salem served an average of 472 patients per month. Altogether, during this six-months period, 1,835 different patients were known to the seven clinics. There was a total of 9,479 interviews by psychiatrists, psychologists, psychiatric social workers and other professional staff members giving diagnostic, treatment and/or consultation to the children and adults.

During this six-months period, the Mental Health Fund matched—\$2 to \$1—Winston-Salem money for a school social worker who helps with incipient mental health problems in the classroom. A mental health nurse for Charlotte had not been recruited, nor had it been possible to locate a traveling clinic staff.

Though clinical programs are established only in the populous centers, many services are available to even the smallest counties. A professional circulating library of books on psychiatry and mental health is available to all professional people in the state. Between 30 and 40 per cent of the books are out on loan at any time. **Pierre the Pelican** messages, a series of twelve monthly printed letters to parents of first-born children are distributed throughout the state. Services of the psychiatric social work consultant are available, and many field trips were made in this period in addition to a heavy correspondence. A set of three **mental health posters** was issued free of charge to health depart-

ments, pediatricians and other agencies throughout the state. A **compilation of resources** for patients with convulsive disorders was issued. Plans were completed and put in effect establishing a permanent center for **field training in mental health** at Psychosomatic Clinic, Duke Hospital. This is open to all public health officers and nurses. Moving picture films for lay education and professional staff training have been purchased and are lent on request. There was financial participation in an **institute** on Human Development for more than 400 teachers in Asheville. A large number of **pamphlets and reprints** were issued to key people throughout the state.

Recruitment efforts are continued in the hope that it may become possible to make available to every county not only mental health informational materials and mental health training opportunities, but also those mental hygiene clinic services which are needed in a well-balanced program. The objective is preventive mental health services designed to reduce the incidence of mental illness and promote positive mental health of all North Carolina citizens.

HEALTH PUBLICATIONS INSTITUTE—Mr. Felix A. Grisette, Executive Director

Although an independent, non-profit corporation, Health Publications Institute, formerly known as Venereal Disease Education Institute, operates as a division of the State Board of Health. The State of North Carolina makes no appropriation whatsoever to the budget of the Institute except to provide quarters in the Old Armory Building. In exchange for these quarters, the Institute makes available a maximum of \$5,000 worth of its educational materials and staff services to the State Board of Health without charge.

The capital funds of the Institute have been provided by grants from the Z. Smith Reynolds Foundation. Current operating expenses are derived from the sales of its education materials and services. The State Health Officer is a

member of its board of directors and its executive committee.

What The Institute Does

1. The Institute develops, produces, publishes and distributes visual aids which are required by people engaged in every aspect of health work, such as books, leaflets, pamphlets, posters, displays, motion pictures, film-strips, and advertising materials.

2. A professional creative service such as writing, artwork, layout, and consultation is available for the use of health departments and related health agencies requiring such services.

3. Research and evaluation projects in all aspects of health education materials are carried on, not only to the end that its own materials may be adequately tested but independently for other health departments and agencies.

Although charged for to an extent that will make them financially self-supporting, these services are made available on a non-profit basis.

1949 Accomplishments

Outstanding accomplishments during 1949 may be summarized under three headings:

1. During 1949 the Institute operated entirely on its own resources for the first time. Prior to June 30, 1949, and dating from the time of its origin in 1942, the Institute had obtained a financial subsidy from the United States Public Health Service in an amount which paid the salaries of a majority of its employed personnel. Since June 30, 1949, the stepped-up program of the Institute has enabled it to operate on a self-sustaining basis without the aid of any direct subsidy.

2. During the year the Institute broadened the scope of its publishing activities to cover the entire field of health, whereas previously its activities had been confined largely to the venereal diseases. At the end of 1949, the total number of available titles of health publications was approximately 100, more than one-third of which were in fields of health other than the venereal diseases, including mental health, cancer, tuberculosis, heart disease, diabetes, rabies, and nutrition.

3. During 1949 the Institute became increasingly recognized as national headquarters for health education materials, as indicated by the fact that more than 5,000,000 copies of its various publications were purchased by health workers in every American state and 32 foreign countries.

SYPHILIS RESEARCH LABORATORY **—Harold J. Magnuson, M. D., Research** **Professor of Experimental Medicine**

The Reynolds Syphilis Study Program, during the year, was officially combined with the U. S. Public Health Service Venereal Disease Research Laboratory at Chapel Hill, N. C. The following report represents the combined activities of these studies.

New Physical Facilities: The new building erected by the University of North Carolina to house this laboratory was completed in October, 1949. Movement of personnel, equipment, and experimental animals was begun immediately, but little could be accomplished until the laboratory furniture and equipment, supplied by the Public Health Service, were installed. Installation of this equipment began on January 15, and had reached the point by March 15, that our quarters in the Public Health and Medical building could be turned back to the School of Public Health. As of the date of this report, installation of equipment in the new building is approximately 95% complete, and the various sections of the laboratory have begun to function within the past two weeks.

The total value of the equipment supplied by the Public Health Service is in excess of \$100,000. Some of this scientific equipment is not duplicated elsewhere on the campus. In so far as it is consistent with intelligent usage and sound property management, various items of special equipment will be available for the use of other schools and departments of the University.

Instructional Activity Within the School of Public Health: Instructional activity has so far been limited to the courses in venereal disease control given to the nurses and parasitologists,

and a separate course given to the physicians. Enrollment in the first course during the Winter quarter of 1949-50 was 44 students. Enrollment in the course for physicians given during the Spring Quarter was 8.

Departmental Activities in Greater University: To an increasing extent the professional members of the staff are being called upon to consult with faculty members and students throughout the University. This is particularly true in departments of the School of Medicine, the School of Pharmacy and the Department of Chemistry. Dr. George O. Doak, Chief Chemist of our staff, has been teaching the courses in Industrial Chemistry (Chemistry 193) during this academic year.

Plans are being made in cooperation with the Institute of Statistics of the Greater University to develop a training program in research methods as applied to the basic medical sciences. It is anticipated that such a program can be begun in September, 1950.

Departmental Service to State and Nation: With the closing of the Venereal Disease Research Laboratory at Staten Island, this laboratory has become the basic V. D. Research Laboratory of the Public Health Service. In this capacity the laboratory is called upon by physicians and health departments throughout the nation for consultative services and the performance of occasional diagnostic tests. Such professional requests are also being received from workers in some of the European countries.

The professional members of the department have been active in state as well as national professional organizations. The Director of the laboratory was recently elected President of the North Carolina Society of Bacteriologists.

Research Projects: The evaluation of the treponemal immobilization test in human and experimental syphilis is being continued. The first phase of this work was reported in the Journal of Venereal Disease Information for November, 1950. Studies since that time have indicated that the test may be

further increased in sensitivity without loss of specificity by increasing the complement concentrations in the test. As of December, 1949, follow-up on the patients with early syphilis treated at the Charlotte and Durham, North Carolina rapid treatment centers on whom immobilization tests have been run in this laboratory, suggested no difference in the retreatment rate among those patients immobilization positive vs those immobilization negative. The data suggest that patients who are immobilization negative tend to become seronegative more rapidly than patients who are immobilization positive. Since there is a correlation in the titer of conventional serologic tests for syphilis in the immobilization test in the early phases of the disease, this finding is not remarkable.

Studies of acquired immunity in experimental syphilis in animals are being compared with results of the immobilization test. While there appears to be some qualitative agreement between the two, we have not as yet found evidence that the degree of acquired immunity as measured by challenge is directly correlated with the titer of the immobilization test. Previously reported studies with homologous strain experiments are being extended to include studies with heterologous strains of spirochetes. These studies suggest that significant heterologous strain immunity may be developed, that it may be measured in a manner similar to that used in the homologous strain experiments, and the degree of immunity conferred by the infection seems to be correlated with the virulence of the original infecting strain. Whether this is further correlated with the tissue reactivity to this first infection is to be determined.

It has been shown that subcurative penicillin treatment of the experimental infection reduces the rate of development of acquired immunity to 1/6 that of the untreated infection. In a paper now in press, the significance of these findings is discussed relative to the apparent high reinfection rate following rapid treatment as compared with prolonged treatment schemes.

Phase microscopy was used in an unsuccessful attempt to determine whether phagocytosis played a role in the process of acquired immunity. While the treponemes may be readily demonstrated under a phase field, and the intracellular structure of the phagocytes may be well demonstrated, we were unable to demonstrate phagocytosis of the organisms either by polymorphonuclear leukocytes or monocytes.

The iodination of normal and immune serum with I-131 has been continued. In spite of the use of radioactive quantities up to 5 millicuries we have been unable to demonstrate any binding of antibodies by spirochetes either in vitro or in vivo. It is felt that the protein fractions used in these iodination experiments were not too well prepared, and attempts are now being made to prepare satisfactory preparations by the new Method X of Cohn, which has been developed within the past few months. Attempts to cultivate pathogenic *T. pallidum* in vitro have been continued. The list of substances known to prolong the survival of the organism in vitro has been extended, but no real progress in the cultivation of this organism can be reported.

Because of limitation in physical facilities, the chemical work has been confined to those projects which could be carried on with a maximum of equipment, with a large share of library research, and the recalculation of previously described data. The work on the disproportionation of aromatic stilboso compounds has been reported during the past eight months under the titles reported below. The work there reported on the Hammett Sigma values is being extended to a number of other properties of various organic compounds.

Publications:

1. Magnuson, Present Trends in the Treatment of Syphilis, North Carolina Medical Journal, November, 1949.
2. Magnuson, Rosenau and Clark, The Duration of Acquired Immunity in Experimental Syphilis, Am. J. of Syph.,

Gonor. and Ven. Dis., Vol. 33, pp. 297-302, July, 1949.

3. Magnuson, Rosenau and Clark, The Susceptibility of Various Strains of Mice to Experimental Syphilis, *Am. J. of Syph., Gonor. and Ven. Dis.*, Vol. 33, pp. 308-317, July, 1949.

4. Magnuson and Thompson, Treponemal Immobilization Test of Normal and Syphilitic Serums, *J. V. D. I.*, Vol. 30, pp. 309-320, Nov., 1949.

5. Prevalence of Antibiotic Producing Coliform Organisms, Further Studies, Halbert and Gravatt, *P. H. Reports*, Vol. 64, pp. 313-319, March, 1949.

6. Halbert and Gravatt, The Relation of Shigella Type Specificity and Susceptibility to Antibiotic Producing Strains of *Escherichia Coli*, *J. of Immunol.*, Vol. 61, pp. 271-282, March, 1949.

7. Freedman and Doak, Arsenoso Derivatives of Phenyl Substituted Fatty Acids, *J. Am. Chem. Soc.*, Vol. 71, pp. 779-780, Feb., 1949.

8. Jaffe and Doak, Disproportionation of Aromatic Stiboso Compounds. I. Mechanism, *J. Am. Chem. Soc.*, Vol. 71, pp. 602-606, Feb., 1949.

Addresses or Papers Presented by Faculty Members:

1. Symposium, Recent Advances in Studies of Venereal Diseases held in Washington, D. C. on April 6, 1949,—Harold J. Magnuson.

2. Lecture to Harvard Medical Students in Boston, Massachusetts on April 22, 1949,—Harold J. Magnuson.

3. Meeting of the Society for Clinical Investigation held in Atlantic City, New Jersey on May 22, 1949,—Harold J. Magnuson.

4. State Medical Society held in Pinehurst, North Carolina on May 10, 1949,—Harold J. Magnuson.

5. North Carolina Society of Bacteriologists held in Chapel Hill, North Carolina on October 8, 1949,—Frederick A. Thompson, Jr.

6. New England Venereal Disease Control Seminar held in Boston, Massachusetts on October 12, 1949,—Harold J. Magnuson.

Full-time Faculty Appointments:

1. Leon D. Freedman, PhD., Assistant Professor of Experimental Medicine.

2. J. D. Thayer, PhD., Assistant Professor of Experimental Medicine.

3. Henry Tauber, PhD., Associate Professor of Experimental Medicine.

4. Charlotte P. McLeod, DSc., Assistant Professor of Experimental Medicine.

Needs and Recommendations:

It is suggested that the academic potentialities of the department's professional staff are not being used to best advantage in the present didactic courses being offered in the field of venereal disease control. It is suggested that more substantial contributions might be made in the laboratory field, particularly in the training of selected graduate students. The training now being proposed in conjunction with the Institute of Statistics of the Greater University represents a step in this direction.

FIELD EPIDEMIOLOGICAL STUDIES OF SYPHILIS—John J. Wright, M. D., Director

The field epidemiological studies of Syphilis at the School of Public Health of the University of North Carolina continued to receive the support of the International Health Division of the Rockefeller Foundation and the North Carolina State Board of Health during this year. Continuous information has been gathered since 1940 to provide basic information necessary for the estimation of syphilis trends in the combined rural and urban areas under study and for the evaluation of control measures.

The efforts of the study staff have been concentrated on the analysis of the accumulated data. During this year the following studies were published:

1. Wright, J. J. and Sheps, C. G.: **REPORTS OF THE NORTH CAROLINA SYPHILIS STUDIES I.** "An Evaluation of Case-finding Measures in Syphilis Control," *Journal of Venereal Disease Information*, Vol. 30, No. 2, February, 1949.

2. Wright, J. J. and Sheps, C. G.: **REPORTS OF THE NORTH CAROLINA SYPHILIS STUDIES II.** "An Evaluation of Case-Finding Measures in Multiple Episodes of Infectious Syphi-

lis," *Journal of Venereal Disease Information*, Vol. 30, No. 7, July, 1949.

3. Wright, J. J. and Sheps, C. G.: **REPORTS OF THE NORTH CAROLINA SYPHILIS STUDIES III.** "An Evaluation of Case-Finding Measures in the Control of Gonorrhea," *Journal of Venereal Disease Information*, Vol. 30, No. 8, August, 1949.

These papers are proving to be of value in evaluating the relative effectiveness of the major case-finding measures. In this way, adequate control programs, providing the necessary balance between efficiency, productivity and economy, can be developed and maintained.

In addition to the above, the following studies have been completed:

1. Wright, J. J., Sheps, C. G., and Gifford, A. E., **REPORTS OF THE NORTH CAROLINA SYPHILIS STUDIES. IV.** "Some Problems in the Evaluation of Venereal Disease Education," *Journal of Venereal Disease Information* (In Press).

2. Wright, J. J. and Sheps, C. G., "The Role of Case-Finding in Syphilis Control Today," *American Journal of Public Health* (In Press).

3. Greenberg, B. G., Wright, J. J. and Sheps, C. G., "The Analysis of Some Factors Affecting the Incidence of Syphilis." Submitted to *Journal of American Statistical Association*.

Studies are proceeding on the basis of which it is expected to complete reports dealing with the following problems:

1. Indices in the Measurement of the Congenital Syphilis Problem.

2. Some Factors Affecting the Syphilis Attack Rate.

3. Epidemiological Indices in Syphilis Control.

4. Trends in the Incidence of Congenital Syphilis.

5. Syphilis in Parturient Women as an Index of Prevalence in the General Population.

6. Trends in the Discovery and Attack Rates of Syphilis.

In addition to the work of the Study itself, various members of the study staff have participated in educational

activities relating to venereal disease control. These have included the assumption of teaching responsibilities in the School of Public Health, University of North Carolina, North Carolina College at Durham, N. C., the North Carolina State Health Department, a number of local health departments in North Carolina, and the Rapid Treatment Centers of North Carolina.

Papers were read at the following scientific meetings:

1. American Venereal Disease Association — Eleventh Annual Session, Washington, D. C., April 8, 1949.

2. North Carolina Public Health Association — Annual Meeting, Greensboro, N. C., September 17, 1949.

3. Public Health Service Venereal Disease Control Seminar, Roanoke, Virginia, December 6, 1949.

DIVISION OF EPIDEMIOLOGY AND VITAL STATISTICS— C. P. Stevick, M. D., Director

The pattern of communicable disease incidence for 1949 shows several significant changes.

Three diseases reached record low totals. There were granuloma inguinale, with a total of 66 cases; malaria, 53 cases; and pertussis, 1398 cases. In addition, diphtheria cases totaling 544, were fewer in number than in any year except 1948.

A few diseases showed record highs for the year. Amebic dysentery cases were 94 in number. This increase is largely due to diagnoses among returned servicemen. The true incidence of asymptomatic amebic dysentery in North Carolina is probably considerably higher than past reports would indicate. This is due to the comparatively small number of laboratory specimens submitted from the general population for study.

Gonorrhea reports have been steadily increasing since 1935 and reached the total of 16,107 cases in 1949. This probably does not indicate an actual increase in the disease but steady improvement in case-finding.

Rocky Mountain spotted fever has shown a rather steady upward trend,

reaching a record high in 1947. The 1949 total of 82 cases was only slightly lower than that of 1947.

Undulant fever showed a sharp increase this year and equaled the record high total of 31 cases reported in 1935. The increase in this disease is probably due, in part, to unauthorized importations of hogs and cattle from infected areas of other states. The 1946-48 average undulant fever morbidity rate for the United States was 3.9 cases per 100,000 population. For the same period the average North Carolina rate was 0.4, the lowest of all the states, seven of which had rates over 10 and two over 20.

Chancroid cases have been steadily declining since 1943. In 1949, at which time the nation as a whole was undergoing its worst outbreak, the North Carolina total of poliomyelitis cases of 247 was above average but compared favorably with the record high of 2,516 cases occurring the previous year. Scarlet fever, which had undergone an unexplained decline since 1945, showed a moderate rise in 1949.

Syphilis reports declined steadily following 1939, at which time the annual total was 30,985, until 1946 when a sharp post-war increase occurred. The decline was immediately resumed, however, and syphilis reports for 1949 totaled 6,748. The most encouraging fact about the decline in this period was that early infectious cases showed a 30 per cent reduction. There has now been an uninterrupted three-year decline in primary and secondary syphilis following the 1946 rise. One disturbing fact regarding the syphilis morbidity picture is that congenital case reports increased in 1949, the total of 417 cases being slightly above the total for 1945. Obviously, more attention must be given to prenatal blood testing and prompt treatment of infected pregnant women.

Tuberculosis morbidity reports have remained at a fairly constant high level since the start of the mass survey program in 1945. The reports in 1949 totaled 3,417 representing 3.5 cases per death. This ratio, which has remained approximately the same for the past three

years, compares very favorably with the ratio of only 1.5 cases found per death in 1944. With a declining death rate, a high case to death ratio indicates efficient case finding. The tuberculosis death rate in North Carolina has declined steadily, with only minor fluctuations, for many years. The 1949 provisional rate did not decline, but presumably this represents only a normal fluctuation.

Typhoid fever cases declined slightly to a total of 53 in 1949, the second lowest total on record. The lowest previous year was 1947. Endemic typhus fever has declined steadily since 1944, the 1949 total being 29.

Changes in other reportable communicable diseases were not noteworthy.

The birth rate declined in 1949 as was expected; however, the provisional figure of 28.2 births per 1000 population is still above that for any year since 1927 except 1947 and 1948. The lowest birth rate ever recorded in North Carolina was 22.1 in 1936 and the highest was 33.4 in 1915.

The provisional death rate for 1949 was 8.1 deaths per 1000 population as compared to 7.9 the previous year. There has been no downward trend on our crude death rate since 1942, showing that we have reached an equilibrium between declining preventable disease deaths of early life and the non-preventable disease deaths of old age, which are slowly increasing in numbers as our population ages. The crude death rate for the United States is approximately 10, the difference between this rate and that of North Carolina probably being due largely to the older age of the nation's population generally as compared to that of this state.

The provisional infant death rate for 1949 also increased slightly over 1948, although the maternal death rate declined to the record low of 1.3 deaths per 1000 live births.

Deaths from the following additional causes reached record lows in 1949, according to provisional figures: syphilis, with a total of 186; pertussis, 35; influenza and pneumonia, 1295.

Record high death totals were set

by cancer, 3040; heart disease, 8768; and intracranial vascular lesions, 3764.

Although at a record low, pertussis continues to outrank diphtheria in importance as a cause of death. Motor vehicle accidents have increased for three successive years; however, the 1949 total of 960 is still slightly below that of 1946 and compares favorably with the record high of 1,261 set in 1941.

Improvement in the registration of births and deaths has been steady during the year. At the close of 1948, 32 per cent of birth certificates and 31 per cent of death certificates were filed late in counties with health officer registrars. At the close of 1949 the corresponding percentages were 25 and 25.4. One of the chief reasons for this improvement is the work done by the field representative under a program begun in 1947. Local registrars, undertakers, hospitals, and physicians are visited in areas where registration is below standard.

Replacement of the index to the three million birth certificates filed between 1913 and 1940 is well advanced. Only the period between 1920 and 1926 remains to be completed. It is proposed to reindex death certificates in the same manner in order to replace the current index which has become seriously deteriorated. By arranging the death index in sections of ten years each instead of single years as at present, search will be much easier in such projects as determining the survival rate of a group of known cancer patients where the exact date of death is not known.

Improvement of the index has made it possible to render more efficient service in supplying certified copies of certificates and at the same time to increase the amount of clerical time spent on compiling statistical information. For this reason, the 1948 bulletin of morbidity statistics included several new compilations, and throughout the year public health statistical information rendered to the medical profession, various agencies, and the general public has been improved in completeness and accuracy.

During the year the Malaria Control

Unit obtained 3,687 blood slides from school children in areas which, in the past, were regarded as highly malarious. A total of 3,409 blood slides was examined by the Laboratory, some of which were taken on surveys during the previous year. In several localities physicians reported that they were treating a large number of malaria cases. These physicians were contacted through the local health departments and invited to send blood smears in to us from their patients for examination. Continuing the procedure followed during the previous year, other physicians in malarious areas were invited to submit slides to this Unit for the purpose of having their diagnoses confirmed. Three hundred six slides were examined, which were submitted by physicians, in addition to those on the regular surveys. No positive smears were found among the slides taken on the regular surveys nor among those submitted by physicians.

The promotional efforts on the part of the U. S. Soil Conservation Service, State Agricultural Extension Service, and N. C. Wildlife Resources Commission resulted in the continuation of large scale pond construction throughout the state. Gratifying cooperation has been received from these agencies in seeing that the pond built under their supervision or through their efforts conform as nearly as possible with the malaria control regulations.

During the year 1,312 pond inspections were made. Impounding permits were not required for 80 of these ponds as they did not come within the regulations; that is, they were either less than $\frac{1}{4}$ acre or were constructed prior to 1937. Four hundred fifty-six ponds did not comply with the regulations; 589 impounding permits were issued, and 187 ponds were reinspected for which permits had been previously issued.

The DDT residual spraying program continued as the largest activity of this Unit. On this program the inside walls and ceilings of the homes of individuals living in areas where malaria has been a problem in the past are sprayed with a 5% DDT emulsion. During the year

72,721 homes were sprayed, using a total of 74,372 pounds of technical DDT powder. The federal government contributed \$118,896.08 toward the cost of this activity, and the state and local governments provided \$123,033.00, the average cost per house being \$3.30.

An extensive survey was conducted in the region immediately adjacent to the portion of the Bugg's Island Reservoir that will extend into North Carolina. Special maps and detailed reports were prepared covering salient factors having potential bearing on the future possibility of a malaria problem developing within the area as a result of impoundment. Detailed recommendations were prepared and submitted to the U. S. Engineers. Catch stations which had been previously established in the vicinity of the proposed reservoir were visited at monthly intervals and records kept of the species of mosquitoes taken in each station on these visits.

This Unit continued to act in an advisory capacity to local health departments in their fly control operations. DDT was purchased in large lots at cheaper prices than those prevailing locally and resold at cost to the local health departments.

DIVISION OF SANITARY ENGINEERING—Mr. J. M. Jarrett, Director

The following is a brief summary of activities engaged in by the personnel of this Division during the calendar year 1949. Since more detailed reports have been submitted monthly to the State Health Officer and members of the State Board of Health, only the highlights of the year's program will be enumerated here.

Administration: During the year, the usual number of conferences were held with officials of the Public Health Service and other State Agencies concerned with mutual problems of sanitary engineering and sanitation. Special assistance was given and cooperation received from the Budget Bureau, Department of Public Instruction, Department of Public Welfare, State Highway and Public Works Commission, Hospitals Board of Control, State Department of

Conservation and Development, School of Public Health of the University of North Carolina, North Carolina State College, and the local health departments.

The year 1949 being a legislative year, considerable time was given to work with the General Assembly, various committees, and other State Agencies regarding legislature. Particular efforts were put forth on stream sanitation legislation, committee work regarding the milk sanitation program, and with the Local Government Commission on the strengthening of laws regarding sanitary districts. The stream sanitation bill was killed, after much work, during the last days of the session. The milk report was never introduced, and the sanitary district laws were changed as requested. Legislation requiring the certification of all regulations to Clerks of Courts necessitated the revision of a number of our regulations. This work was completed, and copies of the regulations were forwarded to all counties, as well as to members of the General Assembly.

Assistance was given the Field Training Unit of the School of Public Health at the University of North Carolina in the development of field training courses for sanitation personnel. Six counties were selected as field training units and during the year 36 sanitarians have received this training.

Assistance was also given the architects, who were employed to design a new office building for the State Board of Health, in reviewing and determining space requirements, organization, etc. This work is being held up because of the question regarding a site, but plans can go forward as soon as the site is definitely determined.

Personnel of the Division became more stabilized during the year, the number of changes being small compared to former years. A more coordinated organization was perfected and the work is progressing more smoothly than at any time during my administration. The volume of work has increased considerably because of expanding activities, but with additional personnel,

which has now been authorized, our organization will be in very good shape. Three new employees were added to the staff during the year, two of these being Engineers on the Federal Stream Pollution Program, and one additional typist-clerk. Only two replacements were necessary. Our staff at the end of the year consisted of 10 Engineers, 12 Sanitarians, and 6 Secretaries, in addition to the Director.

Sanitary Engineering: More time was devoted this year to operational problems in connection with municipal water and sewage treatment plants. Assistance was given the operators through schools conducted for water plant operators and sewage plant operators at the University of North Carolina and at Duke University.

Cooperation and assistance was given and received from the State Stream Sanitation and Conservation Committee in conducting studies of stream pollution. The 80th Congress also passed Federal Legislation regarding stream pollution, and funds were allocated to the State Board of Health by the Public Health Service for special studies and investigations of industrial wastes on interstate streams. This work is being coordinated through the Director of the Division, who is also Chairman of the Stream Sanitation and Conservation Committee, and valuable information is being secured.

The U. S. Geological Survey Laboratory continued to cooperate, and complete chemical analyses of all public water supplies were completed during the year. Work was also started on the water supplies of State Institutions and of the State prison camps through the cooperation of these institutions and the State Highway and Public Works Commission. Special work was also done by this laboratory in checking the fluoride content of public water supplies because of the interest in this problem and its effect on the prevention of dental caries.

Surveys and inspections were made of all interstate carrier watering points and water supplies, and reports were furnished the U. S. Public Health Serv-

ice. Assistance also was given the Public Health Service regarding the sewage disposal problem on the Cherokee Indian Reservation and in the National Park Areas in this State. An inventory of all water supplies and sewerage systems was also made for the Public Health Service.

Assistance was given a number of towns on the location of new well sites. Many improvements were accomplished in connection with municipal water and sewage treatment. Twenty-nine towns completed renovations or built new sewage treatment facilities at an estimated cost of \$2,000,000. The cost of water works projects completed during 1949 was approximately 3,000,000. Included in this are four new supplies, and four new plants for existing supplies.

The sanitary landfill method of garbage and refuse disposal was promoted in a number of towns coincident with our work on typhus and rodent control. We now have a total of 18 landfills operating, nine of which were put into operation during 1949. Projects on rat-proofing and DDT dusting were carried on as in previous years.

Conferences were held, and work was carried on cooperatively, with the Tennessee Valley Authority on swimming pools, recreational sanitation, and stream pollution abatement in the TVA area in North Carolina. A sanitary district covering the Dare County Beaches was formed. This will be a great improvement to the health of this recreational area when work is completed, giving the beaches a safe public water supply.

The program of approving water and sewage facilities at FHA insured homes, and the inspection and approval of subdivisions were continued and is expanding. One Engineer is giving considerable time to this activity.

Sanitation: Because of failure on the part of the General Assembly to clarify the milk situation, as previously reported, our program has continued as in former years. Assistance has been given the local health departments and the Department of Agriculture. Surveys were made of 27 local supplies during

the year; 85 counties now have county-wide ordinances and 7 towns have local ordinances. Many of the administrative problems previously discussed appear to be ironing themselves out, and we have had very little difficulty in the continuation of our milk sanitation program. A large number of plans for the construction of dairy barns have been distributed by this office, and assistance given to owners of pasteurization plants and their architects in the design of these plants. An effort was also put forth during the year to promote the establishment of district-wide milk laboratories, which was started last year. This is being done in an effort to provide the necessary facilities for a number of small counties which are financially unable to support a laboratory of their own. An effort was also put forth to eliminate duplicate inspections by the local health departments in connection with the milk sanitation program.

Considerable time has been devoted to the continuation of the program of assisting owners of foodhandling establishments with the design of their kitchen facilities. Plans for the arrangement of equipment were supplied a number of owners, as well as architects and institutional managers. This takes much time, but is a very effective means of securing proper facilities and better sanitation and operation. The program of food handlers classes given in cooperation with local health departments and the N. C. Restaurant Association increased, and special courses were given at some of our State Institutions at the request of the managers of the institutions. Conferences were also held with fair officials in an effort to improve the sanitation at county fairs. Improvements were noted during the year.

The program of cooperation with the Medical Care Commission continued and was greatly expanded. This program was begun at the request of the Public Health Service and Doctor Ferrell of the Medical Care Commission. A great deal of time was devoted to the review of plans and architects, pre-

paring equipment layouts, inspections of hospital sites, inspections for the purpose of providing information to be used by the Medical Care Commission in establishing licensure standards and procedures, and other activities of cooperation in connection with this program. It is worth noting that this extra work was carried on without the addition of personnel, and at no cost to the Medical Care Commission. The time of one man, in man hours, is consumed in connection with this activity. The tabulation at the end of this report shows the number of inspections made and the plans reviewed and approved. In addition to the work with the Medical Care Commission, inspections were also made of all hospitals during the year and assistance given regarding improvements. These inspections were made of both private and public hospitals.

The Shellfish Sanitation Program, in cooperation with the State Department of Conservation and Development, and the U. S. Public Health Service continued as in the past. North Carolina was rated Number 1 by the U. S. Public Health Service on our Shellfish Sanitation Program for the year 1949. This is a record of which we are very proud. The only thing lacking in this program at the present time is adequate laboratory facilities for the checking of shellfish that is being shipped in interstate commerce. It is hoped that some arrangement will be worked out during the coming year in connection with this matter.

Concentrated effort was given to rural sanitation work and one man was assigned to this activity during the year to help local health units with sanitary privy projects, septic tank construction, etc. It had been noted that quite a number of the local health departments were neglecting this phase of their rural sanitation program, and, therefore, our decision to give concentrated attention to this activity. Results so far indicate that this program is bringing about much needed repairs and installations, and local activities have increased since we made this help available.

One thing of considerable interest

was the Southeastern Sanitation Seminar which was held at Blue Ridge for the personnel of the States of West Virginia, Virginia, Maryland, District of Columbia, South Carolina, and North Carolina. Approximately 325 Sanitarians and Health Officers from these states attended, and the meetings were very helpful to all of those who did attend.

Work was also carried on in cooperation with the State Department of Public Welfare in the inspection of rest homes, children's homes, and other places required to be licensed by the Department of Public Welfare.

Activities regarding the enforcement of the State Bedding Law were continued as in the past years.

A numerical tabulation of inspections and activities covered by the personnel of this office is attached.

Numerical Summary of Activities

Engineering:

Filtration plant inspections.....	260
Chlorination plant inspection.....	70
Iron removal plant inspections....	37
Well supplies inspected.....	127
Well sites examined and approved	36
Water samples collected & examined	99
Special investigations conducted (water supplies)	87
Treatment plant inspections.....	404
Sewer system inspections.....	53
Stream pollution problems investigated	9
Plant site investigations.....	116
Special investigations (sewerage systems)	97
Sand analyses	30
Water supply plans approved ...	36
Sewage works plans approved....	52
Swimming pool plans approved...	5
Hospital plans approved (plumbing)	5
Sewage plant plans furnished....	110
Well house plans furnished.....	6
Swimming pool plans furnished...	9
Grease disposal unit plans furnished	14
Miscellaneous plans prepared....	13
Outdoor bathing places investigated	26
Hospital sites inspected.....	11
Sources of water supply ex-	

amined for interstate carries.....	25
Watering points examined.....	45
FHA developments investigated....	52
FHA cases processed.....	1,796
Town or county board meetings attended	27
Special conferences with engineers, city, and county officials	359
Premises inspected for ratproofing and eradication.....	15,621
Establishments ratproofed	761
Cost to owners for ratproofing	\$59,744
Premises treated (eradication)...	8,329
Premises inspected for DDT dusting	49,637
Premises treated (DDT).....	24,204
Pounds of DDT dust used.....	39,820
Premises treated (Poison).....	23,636
Local campaigns supervised (rat poisoning)	25

Sanitation:

Milk plant inspections.....	256
Dairy Farm inspections.....	899
Milk surveys completed.....	27
Milk plant plans reviewed.....	43
Special investigations—milk....	5
Milk samples collected.....	91
Conference regarding milk.....	184
Foodhandling establishments inspected	1,499
School lunchroom inspections...	336
Abattoir and meat processing plant inspections	386
Meat Market inspections.....	438
Frozen Food Locker Plant inspections	96
Poultry Plant Inspections.....	596
Plans reviewed for foodhandling establishments	3,333
Foodhandler schools held.....	34
Private water supply inspections	252
Private sewage disposal inspections	381
Privy inspections	1,055
Summer camp inspections	53
Institutions inspected	349
Hospital plans reviewed.....	186
Hospital plans approved.....	53
Public school inspections.....	160
Swimming pool inspections.....	42
Hotel and tourist camp inspections	191

Complaints general sanitation...	119
Special investigations	66
Special meetings	351
Shellfish packing plants in- spected	972
Retail seafood markets in- spected	96
Patrol inspections of re- stricted waters	86
Plans distributed	312
Number of court cases.....	10
Retail places inspected.....	2,291
Manufacturing plants inspected	4,061
Pieces of bedding condemned...	3,453

DIVISION OF ORAL HYGIENE—E. A. Branch, D. D. S., Director

In reporting on the activities of the Division of Oral Hygiene I would like to call attention to two significant statements pertaining to dental health that appear in the current literature.

Nina Simmonds in **DENTISTRY IN PUBLIC HEALTH** says:

"....., nutrition is only one of the many factors in dental problems. Nevertheless, it is the factor over which individuals could have control, and this control cannot start too early in life."

Dr. O. E. Hoffman, Director of the Division of Dental Health in Iowa, bases the following statement on the results of a 2-year research study: "Tooth decay can be reduced between 50 and 60 per cent by the relatively simple process of brushing and rinsing the teeth immediately after eating."

The common denominator in these statements and the theme which we wish to highlight is that **DENTAL HEALTH, GOOD OR POOR, IS, TO A LARGE EXTENT, UP TO THE INDIVIDUAL.** With dental authorities in agreement over the fact that the reduction of sugars and starches in the diet is an effective dental caries control measure and with this recent proof of the efficacy of brushing and/or rinsing the teeth immediately after eating, we are impressed anew with our opportunity and obligation to educate the individual to the acceptance of this responsibility. This serves to reinforce and reaffirm our faith in the principle

on which our dental health program is based, "Prevention through Education."

If dental health education is to succeed, it must begin with the child. That is why the activity of our Division of Oral Hygiene is centered in the public schools of the State. It is to the classroom that the school dentist, who is especially trained for this work and who devotes his whole time to it, goes. The dentists, trained not only in children's dentistry but also in child psychology and methods of teaching, proceeds to teach the children in their own classrooms, in surroundings in which they feel at home and secure. Of course, his teaching is governed by the grade level and interests of each particular group. The dentist is equipped with projector, models, posters, and all kinds of gadgets.

After the teaching has been done and a friendly relationship has been established, the dentist inspects the mouths of all the children. Then the actual corrections are begun. The school dentist has already set up his office, using portable equipment, right in the school building in a room provided for such purposes. The corrections consist of fillings, extractions, silver nitrate treatments, prophylaxes, and the topical applications of sodium fluoride. Corrections are made for as many of the under-privileged children as time and funds permit.

Parents of the privileged children are notified by postcards that their children need dental attention and are advised to consult their own dentists. The school dentists make no diagnoses for these referred children.

The educational part of the program does not stop when the dentist leaves the school, for, in addition to the models and charts which he uses, the dentist has with him classroom teaching aids to leave with the teachers to help them in teaching Mouth Health. After all, the classroom teacher is the greatest ally we have. It is she who will make the dentist's message a part of the everyday living of the children in her grade. She will correlate it with her Reading, Writing, History, Geography,

Language, and Science. In order to make this easier for the teachers, graded dental health material for classroom use, posters and charts, and news releases for the school papers, are prepared and distributed by the Division of Oral Hygiene.

As stated earlier, the emphasis must be on prevention. In the light of the present knowledge of the cause and prevention of dental caries, the three preventive measures which are stressed in our educational program are:

1. Regular visits to the dentist for the early detection and correction of dental defects.

2. Selection and consumption of a proper diet and temperance in the consumption of sweets.

3. Proper and regular brushing of the teeth.

In the field of visual education, the puppet show and dental health museum continue to be popular. We believe that they are "paying off" in improving the dental health habits, and therefore the dental health, of our children.

During the year, 1949, the ten dentists on the staff of the Division of Oral Hygiene inspected the mouths of 76,706 children. They made dental corrections for 33,916 underprivileged children to their own dentists. Approximately 75,000 children had the benefit of the classroom teaching by the dentists.

You will note that the topical application of sodium fluoride was included in the types of dental service rendered the underprivileged children. We are persuaded from the evidence that there is virtue in the flourine theory of reducing the incidence of tooth decay and we would not minimize the importance of any worthwhile theory. The incidence of tooth decay needs to be reduced.

However, it should be understood that the application of sodium fluoride to the teeth of children is only one of several preventive measures. For obvious reasons it is one that is not immediately available to every child, while the two mentioned at the beginning of this report are equally, if not more, ef-

fective control factors and they are measures which can be practiced by every man, woman, and child all of their lives.

This brings us back to our original thesis that the individual can and must accept responsibility for his or her own dental health. It is our responsibility to bring about such acceptance by an intensive and widespread educational program.

STATE LABORATORY OF HYGIENE

—John H. Hamilton, M. D., Director

The State Laboratory of Hygiene for the year, 1949, continued to increase the service which it renders for the purpose of promoting the health of the people of North Carolina. By aiding in the diagnosis of infectious diseases, by preparing and distributing biological products for the prevention of human infections, and by other procedures the laboratory adds its service to the efforts of others who are endeavoring to make our State a safer and a better place in which to live.

So completely does the service of the laboratory cover the State that trends in the prevalence of many diseases can be determined with a fair degree of accuracy by scrutinizing the work of the laboratory; for instance, the specimens of blood sent in for examination for Undulant Fever increased from 4,247 in 1948 to only 4,487 in 1949, but the number positive in 1949 was 85 while only 34 were found positive in 1948. Although more specimens were examined in 1949 than 1948 there were significant decreases in positive reports for Tularemia and the Rickettsial infections—Rocky Mountain Spotted Fever and Endemic Typhus.

There was a slight increase in the number of specimens of blood sent for typhoid culture in 1949 but only 20 positive cultures were found in 4,150 specimens. Typhoid fever appears to be a disappearing disease in North Carolina. This fact represents a lot of hard work by a great many people. That the laboratory has played an important part from its very beginning in 1908 is evidenced by the examination of some

200,000 specimens of water and the preparation of gallons upon gallons of typhoid vaccine. Perhaps more than any other State, North Carolina, has depended upon typhoid vaccine as one of its main defenses against this disease while it was improving its environmental sanitation. That our health officers are taking an increasing interest in the cultural release of typhoid patients and checking on typhoid carriers is evidenced by the fact that for the third consecutive year there has been an increase in the number of specimens of feces sent for typhoid culture, the number for 1949 being some 700 more than in 1948, and almost twice as many as in 1947. Yet, for 2,800 cultures—typhoid organisms were found in only 98.

There was an increase in the number of throat cultures sent in to be examined for diphtheria but no increase in the number of positive reports.

We need not limit our boasting to accomplishments in the fight against typhoid, but we can take pride in our progress against diphtheria.

From the laboratory point of view it would seem that gonorrhea is becoming less prevalent. Fewer smears were examined and fewer of these were found to be positive in 1949 than in 1948. There were a larger number of cultures for gonococcus in 1949 but of 1,885 specimens only 247 were positive cultures as compared with 1,883 specimens and 586 positive cultures in 1948.

Malaria has decreased to the point where it is almost insignificant as a public health problem. There was an increase in the number of specimens sent for malaria examinations, but in 1,019 specimens not a single malaria parasite was found in 1949; whereas, in 1948, 976 specimens revealed only three positives; of 1,094 specimens in 1947 there were 32 with malaria parasites.

The number of miscellaneous examinations continues to increase.

The increasing interest in tuberculosis is indicated by the fact that in 1949 there were 15,464 specimens as compared with 12,088 in 1948 with typical acid

fast organisms found in 1,738 in 1949 and 1,466 in 1948.

A few years ago Vincent's Angina was regarded as an important public health problem. In 1947 the laboratory received 9,200 specimens; in 1948, 6,534, and in 1949 only 2,695 specimens were examined and typical organisms found in 637 of these.

Serological tests for syphilis continue to represent one of the major activities of the laboratory; nevertheless, there was a marked drop in the number of specimens of blood sent to the laboratory for this type of examination. In 1949, 357,235 tests were performed as compared with 402,224, in 1948. The development of local laboratories which have been approved for the making of serological tests for syphilis has unquestionably shifted a considerable amount of the load from the State Laboratory to the local laboratories. There has been a conservative increase in the number of specimens sent for quantitative syphilis serology—3,358 quantitative tests were performed by both V D R L and the Kline Cardiolipin Tests.

We are now equipped to perform complement fixation tests on the rickettsial diseases (Murine typhus, Rocky Mountain spotted fever, Rickettsialpox and "Q" fever) and on the following viral disease: Eastern equine encephalomyelitis and Lymphocytic choriomeningitis. Chicken red cell agglutination inhibition reactions for the determination of antibodies to influenza will be performed upon blood specimens when acute and convalescent specimens are submitted.

For the rickettsial diseases complement fixation tests for Endemic Typhus were performed on 602 specimens and for Rocky Mountain spotted fever only 32 tests were performed. We have been anticipating the occurrence of Rickettsialpox in North Carolina as well as "Q" fever but only one specimen was sent in for "Q" fever and it was unsatisfactory.

Another new activity in the State Laboratory of Hygiene is in the field of Cancer Cytology. One of our ex-

perienced microscopists has been trained in the Papanicolaou method. In the early part of the year a survey was made of the women patients at the State Hospital in Raleigh—571 were included in this study. Beginning in July we added a cytology service for the women examined in the Cancer Clinics conducted by the State Board of Health—642 were examined.

The number of specimens of water sent to the laboratory for examination continues to increase. There were 9,652 in 1949 as compared with 9,075 in 1948 and 8,091 in 1947. To a considerable extent this increase represents the development of new—small municipal or commercial supplies. A chemical survey in North Carolina waters being conducted by the United States Geological Survey, the North Carolina Department of Conservation and Development, and the State Laboratory of Hygiene, is continuing to make progress. This study has resulted in the following publications:

- 1—Public Surface Water Supplies in North Carolina
- 2—Fluoride in Surface Water and Public Water Supplies
- 3—Public Ground Water Supplies in North Carolina

For biological supplies there has been a decrease in the distribution of diphtheria toxoid (Alum Precipitated) and the soluble diphtheria toxoid or Ramon. There has been an increase in the amount of diphtheria toxoid combined with pertussis vaccine. There has been a three-fold increase in the amount of diphtheria, and tetanus toxoid combined with pertussis vaccine—the so-called triple antigen. There has been a ten per cent decrease in the amount of Pertussis Vaccine distributed. When a balance is struck we find that more children are protected against diphtheria, tetanus and pertussis now than formerly, but that the tendency is from monovalent antigen to multivalent antigens. There is approximately ten per cent increase in the amount of smallpox vaccine distributed in 1949—an amount sufficient to vaccinate 275,346 was sent from the laboratory. Apparently the

well publicised epidemics of smallpox among unvaccinated populations makes it easier for our physicians and health workers to vaccinate North Carolina citizens.

The amount of typhoid vaccine distributed has continued to remain approximately at the same level for the past three years; notwithstanding the fact that typhoid fever is relatively a rare disease and that there is an increased tendency to give booster doses of 1/10 of a cc. intradermally instead of 1 cc. subcutaneously.—549,560 cc. of typhoid vaccine—both monovalent and triple, were distributed in 1949.

There was an increase in the number of antirabic treatments sent from the laboratory. In 1949, 868 were sent as compared with 771 for 1948. This occurred even though there was a decrease in the number of animal heads sent to the laboratory to be examined for rabies in 1949.

The experience of the laboratory with diphtheria antitoxin represents the problem of mass psychology. In 1948 our demand was much stronger for 10,000 unit packages than for 20,000. In 1949 the 20,000 unit package increased in popularity. There was a definite increase in the demand for 1500 unit packages of Tetanus antitoxin for the prevention of tetanus, although there was a decrease in that used for treatment of the disease.

During 1949 there was a very marked increase in the demand for Immune Serum Globulin of which the laboratory sent out 31,284—2 cc. vials. All this Immune Serum Globulin was made available to the Laboratory without cost by the American National Red Cross for the control of measles in the children of North Carolina. No charge for the product is made to the patient or parent although the physician who administers the Globulin can charge for his services.

Blood plasma which through 1947 and 1948 was made available to the laboratory by the American National Red Cross was not available in 1949. We distributed only 1,782 packages which was left over from our 1948 supply, after

which we returned all outdated plasma and all plasma in the laboratory to the Red Cross for processing into human Immune Globulin.

The National Institute of Health discontinued supplying the laboratory with Rocky Mountain Spotted Fever Vaccine, so none was distributed in 1949, although 19,286 cc. were distributed in 1948.

In the Report for 1948 mention was made of the review of our activities by Dr. Steward E. Miller, Senior Surgeon, U. S. Public Health Service, then in charge of the Communicable Disease Center in Atlanta. Since the General Assembly authorized the employment of two additional Junior Bacteriologists, we have been able to carry out all of Dr. Miller's recommendations in the field of bacterial culture.

The personnel problem which has been most perplexing since 1941 seems to be easing up a bit. As this report is written it has been four months since we have had a resignation. A decrease in the prevalence of resignations represents an increase in the experience and training of laboratory workers.

It is our feeling that the laboratory renders accurate, dependable service. It is our ambition to increase both our efficiency and dependability. As the years go by the laboratory becomes more and more an institution whose traditions began to be established in 1908 and which have naturally strengthened with the passage of years. Our entire staff takes pride and pleasure in rendering the best service possible to the people of North Carolina.

SCHOOL-HEALTH COORDINATING SERVICE—C. P. Stevick, M. D., Co-Director, Charles E. Spencer, M. A., Co-Director

The North Carolina School-Health Coordinating Service which is sponsored by the State Department of Public Instruction and the State Board of Health, officially represented both agencies in the school health and physical education programs in North Carolina during the period January 1, 1949 to December 31, 1949.

In carrying out this responsibility the staff members worked with school superintendents, principals, and teachers, with public health department personnel, and with representatives of other agencies interested in the health of children, youth and adults.

Major Activities of the Year:

1. Curriculum Study and Improvement Project

The School-Health Coordinating Service staff initiated, directed, and conducted, under the authority vested with the State Superintendent, a "Curriculum Study and Improvement Project in Health, Physical Education and Safety." The project was designed to: (1) improve the local school health programs, (2) serve as an in-service education program, and (3) prepare the materials for a publication to be distributed to local schools. Members of other divisions of the State Department of Public Instruction and the State Board of Health participated in planning and conducting the project.

The need for a cooperatively developed curriculum guide was emphasized by the Report of the State Education Commission Study which was participated in by an estimated 50 or 60 thousand citizens for the purpose of determining the present and future needs of the schools in North Carolina and recommending procedures for meeting those needs. Another cooperative project which served to emphasize this need was the report of the Committee on the School Health Program—Southern States Work Conference on Educational Problems—which was developed cooperatively by representatives from all the Southern States for the purpose of stimulating local schools and school systems to take the leadership in carrying on cooperatively planned school health programs.

On the county and city level 192 local committees, representing 120 school administrative units participating in the curriculum study project.

During the Fall, eleven district meetings—six for white and five for Negro schools—were held in various sections

of the State for the purpose of planning local curriculum work.

Local committee chairman together with superintendents, supervisors, and health department and college personnel attended and participated in these conferences which were organized into discussion groups under the leadership of the members of the steering committee. A second series of similar meetings was held during the early Spring of 1949.

The State Curriculum Committee was made up of 120 persons selected in the following manner: 33 representatives elected from the eleven districts—one for each of the areas of health, physical education, and safety—and the additional persons selected to include teachers, principals, superintendents, supervisors, local health department personnel, college and university personnel, and representatives from the State Board of Health and the State Department of Public Instruction. Consultants were invited in at various times.

For working purposes, the State Committee was divided into three groups—health, physical education, and safety. Each group held three meetings—one in the fall of 1948 and two in the spring of 1949—and in addition, there were numerous meetings of sub-committees from each group. Reports of the work of each of these groups were submitted to the steering committee during the Spring and Summer of 1949.

To facilitate the work of the State Committee, the health and physical education groups selected a coordinating committee whose function was to help prevent overlapping of areas and to get a balanced program.

Also, a committee composed of representatives from the three groups of the State Committee was selected to work with the steering committee in preparing the introductory material and the section on Organization and Administration.

In order to get the cooperation, interest, and assistance of all agencies and organizations concerned with the school health program, a statewide con-

ference was held in Chapel Hill in the Fall of 1948. At this conference, each agency was requested and given an opportunity to make recommendations for improving the school health program.

The steering committee assumed the responsibility of providing an interchange of information by receiving reports from local committees to the State Committee and by arranging for the local committees to receive reports of the State Committee meetings. A large number of county and city units developed their own curriculum guides, and sent copies of these to the steering committee. These materials have been of valuable help to the state committee.

During the fall of 1949 one meeting of each of the three groups—health, safety and physical education—was held. Each of the seven sub-committees held several meetings also during the summer and fall.

At the end of 1949 some of the health and safety materials are being "tried out" in schools for evaluation before being accepted for general distribution. Some of the materials have been returned to the committee members for approval of recommended changes while still other materials are in the hands of the steering committee in the initial stage of refinement.

According to the plans at the present time the physical education materials will be printed in a guide sometime early in 1950. The health and safety materials will be used in a tentative form for at least a year.

2. Administration and Supervision of School Health Funds

The School-Health Coordinating Service was designated as the administrative unit to represent the State Department of Public Instruction and the State Board of Health in the administration, supervision and promotion of the school health program including the administration of school health funds allocated to city and county school administrative units and to local boards of health.

The 1949 North Carolina General Assembly appropriated for each year

of the biennium 1949-51 \$550,000 to be used by the State Board of Education as grants in aid to city and county school administrative units for school health work. Those funds are allocated by the State Board of Education as follows:

a. Each county and city school administrative unit is allotted an equal to 50¢ per pupil based on the Average Daily Membership for the first seven months of the previous school year.

b. In addition \$1000 are allotted to each county regardless of size. Each school administrative unit within the county receives a portion of the \$1000 allotment based on its percentage of the total students in the county.

The above funds are channelled through city and county school superintendents in the same manner as other school funds.

In addition to the school health funds mentioned above the State Board of Health earmarked for school health an amount equal to 40¢ per pupil in Average Daily Membership to county, city or district health department.

Before expenditure of either of the above mentioned funds a joint plan and joint budget was drawn up by the local school superintendent and the local health officer and submitted to and approved by the School-Health Coordinating Service.

The funds are not restricted as to type of expenditure except that they shall be spent specifically for school health, this to include:

a. Medical, dental, nursing, educational, technical and allied personnel. Helping teachers or supervisors of health, physical education and safety may be employed but teachers for classroom instruction should be paid as formerly.

b. Fees for clinicians services (examinations and other diagnostic services).

c. Correction of physical defects for school children where parents are unable to pay for health services and not otherwise provided for.

d. Travel of personnel and for

transporting children to clinics and hospitals.

e. Supplies and equipment essential for conducting a school health program.

f. For approved in-service training programs.

3. Mental Hygiene

Mental hygiene has been an integral part of several activities of the School-Health Coordinating Service. It is written up as a social activity in this report because this service to schools is relatively new in this state.

The program for promoting mental health through education in the public schools has continued to develop. Demands for services of the Consultant in Mental Hygiene have become greater than our ability to satisfy. Some of the typical activities in this area were:

a. In-service education workshops—twelve administrative units. Four to seven sessions of two hours each in each unit. Activities included—use of films, lectures, group discussions, demonstrations, child study.

b. Curriculum development—a section of the forthcoming revision of the state course of study in health will contain a section on mental health.

Approximately 250 classes in Human Relations were initiated in grades 6, 7, 8.

c. Meetings—were held with approximately 40 groups consisting of parents, teachers, and/or supervisors.

d. Materials prepared—For parents—two printed pamphlets. One deals with preparation for school entrance; the other, with preparation of problems of the adolescent period. For school personnel—mimeographed: Suggestions for In-Service Education in Mental Hygiene, list of Human Relations Films and Suggestions for use, Bibliography on Family Life Education.

e. The consultant served on the staff of the Health Education Workshop at the University of North Carolina (summer session).

f. The consultant served as a member of: Advisory Committee on Spe-

cial Education (State Department of Public Instruction), Committee on Education of Exceptional Children (State Mental Hygiene Society), Steering Committee on State Participation in White House Conference.

4. Health Education Workshop

A Health Education Workshop was sponsored by the School-Health Coordinating Service and the University of North Carolina at Chapel Hill from June 9 to July 19, 1949.

The purpose of the Workshop was to provide opportunities for teachers, school administrators and health workers (1) to study the major health problems of children and adults; (2) to assist them in planning functional programs to meet the needs of their own particular school-community situations; and (3) to gain basic information and a mastery of skills and techniques essential to the best implementation of such programs.

Six semester hours of graduate or undergraduate credit was given by the University to those who completed the work.

Financial aid in the amount of \$1250 was given by the North Carolina Division of the American Cancer Society to the University of North Carolina to be used toward general expenses of the workshop. Local Tuberculosis Associations provided scholarships to individual participants from their respective counties and cities. A report was prepared.

5. In-Service Education Work with Local Groups

On invitation by local school and health department groups the members of the staff assist in planning and conducting in-service education programs including workshops, conferences, institutes, surveys, study groups and demonstrations.

6. Cooperation with Other Agencies

a. North Carolina Association for Health, Physical Education and Recreation, a department of the North Carolina Education Association.

(1) Staff participated in the Second State Conference.

(2) Staff participated in the various

meetings and the general state meeting.

b. Participated in formation of a state health council.

c. Attended and participated in various conferences including:

(1) Superintendent's conference

(2) Supervisor's conference

(3) Principal's conference

(4) Health Educator's conferences

(5) District and state North Carolina Education Association meetings.

(6) North Carolina Public Health Association meetings.

(7) North Carolina Recreation Association conference.

(8) Family Life Education Conference.

d. Assisted with arrangements for and participated in the Convention of the Southern District American Association for Health, Physical Education and Recreation held in Asheville, N. C. in February.

e. Worked cooperatively with the College Conference for Health and Physical Education. This organization held two meetings during the year. The conference is concerned with the improvement of teacher education in health and physical education.

7. Demonstration Work in Negro Schools

a. The Negro staff members worked intensively in the following counties:

(1) Onslow

(2) Robeson

(3) Northampton

b. The Negro staff assisted with the Health Education Workshop for teachers at North Carolina College in Durham. They also participated in the Family Life Education Workshop held at the same institution.

8. Preparation and Distribution of Materials

One of the activities carried on in connection with all other activities is that of preparation of specific materials, listed below, of distributing these and other materials and of serving as a resource for information concerning materials. Some of the materials prepared in addition to those

listed under specific activities above are:

- a. News Letters were prepared.
- b. Materials for local health committees.
- c. Articles were written for the September issue of "The Health Bulletin" published by the N. C. State Board of Health.
- d. The Manual of Screening and Medical Examination of Elementary School Children was revised and a supply printed.
- e. Physical education bulletins.
 - (1) Indoor games
 - (2) Folk dances
- f. Special materials concerning the program.

- (1) Improving School Health Programs in North Carolina.
- (2) Screening and Medical Examination.

9. Hearing Conservation

The hearing conservation program was given a boost this year when State Board of Education funds were made available to local counties for employing technicians and purchasing audiometers. Staff members have given consultant services to local schools and health departments and have assisted in training technicians in counties and cities beginning audiometer testing of school children. A manual for use by technicians, administrators, supervisors, and others was prepared and distributed.

BUREAU OF NUTRITION — Bertlyn Bosley, Ph.D., Director

During the year, the Nutrition Division has endeavored to meet the requests received from county and district health departments. The Division has not been able to respond to all request but even so, a greater amount of work was accomplished due to additions to the staff. The work was conducted through the health departments, institutions and schools in 31* counties and cities.

Increased funds were appropriated for the State Board of Health, by the 1949 Legislature. Of these funds approximately \$10,000 was allotted to the Nutrition Division and this sum en-

abled the Division to plan an extension of its work. This is the first state appropriation for nutrition work to the State Board of Health.

A special position in nutrition has been approved. This position is to provide a nutritionist as a member of a team which will set up a demonstration area in maternal and child health. She will be assigned to work with the Orange-Person-Chatham-Lee District Health Department and will have her headquarters at Chapel Hill. She will work in close cooperation with the School of Public Health. Candidates for this position were under consideration at the end of the year.

One candidate was granted a scholarship at Simmons College in September. She will join the staff on the completion of one year of study.

Work With Nurses: The staff education program for nurses was continued at the customary quarterly conferences. The topics for discussion selected by the nurses, were, in part: a review of the basic information about nutrition; the effect of food habits upon nutrition practices in North Carolina; nutrition for children; adequate diets for families with low incomes; special dietary problems such as diabetes, obesity and underweight. During the year 28 conferences were held, attended by 388 public health nurses.

Clinics: Services of the nutritionists were available in the clinics of the health departments where nutritionists were stationed. Group discussions and individual conferences were held in the pre-natal, well-baby, and pre-school clinics. Other clinic patients were referred to the nutritionist by the doctor or nurse. Twenty-six group discussions and 137 individual conferences were held in clinics during the year.

Surveys: Surveys of food habits of children to determine dietary patterns

*Henderson, Buncombe, Burke, Caldwell, Guilford, Rockingham, Caswell, Alamance, Forsyth, Surry, Halifax, Edgecombe, Wake, Chatham, Mecklenburg, Charlotte, Wayne, Duplin, Pender, New Hanover, Durham, Haywood, Swain, Cherokee, Concord, Greene, Greensboro, High Point, Leaksville-Spray, Reidsville, Winston-Salem.

are used as a basis for teacher instruction and planned nutrition activities of children.

The three day surveys made on 9-11 year old children have been continued. During the year 723 children were interviewed for diet histories in 21 schools. In general the surveys revealed, as they did in previous years, that the consumption of meat and meat substitutes and cereals was high. On the other hand the consumption of milk, citrus fruits, tomatoes, green and yellow vegetables did not meet the minimum recommended allowances considered important for good growth and good health of children.

Work With Teachers: Instruction in nutrition and special assistance to teachers has been continued in the counties during the school year. Six hundred teachers from 11 counties have attended these courses during the year. Following the instruction, 248 teachers requested specific help in classroom teaching and have included planned nutrition teaching with the children as a part of their health program. Some of these units used included feeding experiments with rats and guinea pigs.

The North Carolina School for the Deaf at Morganton had the services of two consultants for a teacher's course in nutrition. The consultants also held one meeting with the supervisors.

The training of lay groups in the various communities has continued, as in the past. This has included study groups composed of parents, industrial workers and others.

Work of the Consulting Dietitian:

Service to Institutions:

Dietary Consultant service which was begun in September, 1948 has been well received. It has included assistance in reviewing architects plans and working with architects on kitchen construction or renovation in state institutions and in hospitals constructed under the Medical Care Commission; assisting in the establishment of specifications for food service equipment for state institutions; evaluating dietary practices in state and county institutions when requested; providing menu guides; co-

operating in food handler's courses in state institutions.

Dietary consultant service has been given to the following state institutions: Caswell Training School, N. C. School for the Deaf, N. C. School for the Blind, N. C. School for the Blind and Deaf (colored), State Industrial School for Girls, Oxford Orphanage, State Hospital at Morganton, State Hospital at Butner, State Hospital at Goldsboro, McCain Sanatorium, Eastern Carolina Sanatorium, Western Carolina Sanatorium, Rockingham County Tuberculosis Unit of Rockingham County Home, Halifax County Tuberculosis Sanatorium, Asheville Orthopedic Hospital, Nash County Home and University of North Carolina Medical School.

There have been 55 sets of plans and 18 sets of specifications reviewed for the Medical Care Commission.

Special Activities:

Studies:

Joint planning with the State Board of Public Welfare has enabled the Division to begin a study of the dietary needs of the families receiving Aid to Dependent Children's funds. This study was not completed at the end of the year and work is being continued.

A second study in cooperation with the State Board of Public Welfare is being conducted in Institutions for the Aged. This study is to determine the food practices of older people.

A demonstration program with the School Lunch Division of the Department of Public Instruction and the Nutrition Division has been started in six special schools in the state to tie in nutrition education in the classroom with that of actual application in the lunchroom. This study is also being continued.

The nutritionists on the staff worked with the director of the Health Publications Institute in planning six pre-natal leaflets and posters for use of the health departments, doctors, pre-natal clinics and others working in nutrition.

Summer Projects:

Two nutrition consultants were on the staff of the Health Education Work-

shop held at Chapel Hill July 9-July 15. Workshop participants were elementary and high school teachers and principals. In addition to lecture and discussion periods there were laboratory periods with experimental animals.

Three consultants participated in the six week's workshop for colored teachers and the graduate programs for negro public health nurses at North Carolina College in Durham. Lectures, discussions, supervised teaching and school lunch were included as nutrition activities.

Other activities included consultant participation in the Appalachian State Teachers College Workshop for Teachers; the workshop for Home Demonstration Club Leaders at Brasstown; the school lunch workers conference at Woman's College, at Greensboro, at Elizabeth City, at Asheville and at Clinton. In addition to workshops, three consultants attended the Geriatrics conference at Chapel Hill.

Two students from Western Reserve University were accepted to work with the staff for field orientation in nutrition, one for a period of four weeks, the other for a period of two weeks.

The year's work represented the greatest activity yet attempted due to a larger staff and fewer resignations. More staff is needed to meet requests constantly received and this matter is receiving active attention.

DIVISION OF INDUSTRIAL HYGIENE—O. J. Swisher, Jr., M. D., Director

Medical:

Physical examination and x-rays (dusty trades of silica and asbestos)1842
 X-rays taken in non-dusty trades.. 353
 Pre-employment (x-rays only).. 98
 Employees issued work cards.....1810
 Employees recommended to be removed from dusty trades..... 32
 Employees recommended for further sanatorium studies with tentative diagnosis 24
 1 questionable cystic disease, both lungs. Possible diaphragmic hernia.

1 bilateral T.B., moderately advanced.
 2 scarring of left apex.
 1 scarring of both apices.
 3 questionable pulmonary T.B.
 1 extensive tubercular pneumonia.
 2 probable moderately advanced tuberculosis (activity questionable).
 1 questionable active T.B., moderately advanced.
 1 active T.B., moderately advanced.
 1 questionable asbestosis and questionable active T.B. or fungus infection.
 1 asbestosis, first stage, with emphysema and questionable infection.
 2 suspicious T.B.
 3 pulmonary tumor pathology.
 1 cardiac decompensation.
 1 minimal T.B. (inactive).
 1 moderately advanced T.B. (activity questionable).
 1 extensive tubercular pneumonia.
 2 probable minimal active T.B.
 Employees with Silicosis..... 16
 4 first stage silicosis (early)
 11 second stage silicosis (moderate)
 1 third stage silicosis (advanced)
 Employees with Asbestosis..... 34
 25 first stage asbestosis (early)
 7 second stage asbestosis (moderate)
 2 third stage asbestosis (advanced)
 Plants visited for physical examination and x-rays..... 38
 33 silica plants
 5 asbestos plants
 X-ray retakes 11
 Medical case histories submitted to the Industrial Commission..... 25
 Supplementary medical care histories submitted to the Industrial Commission 5
 Special physical examinations and x-rays requested by the Industrial Commission 24
 2 essentially negative
 5 silicosis, first stage
 6 silicosis, second stage

3 silicosis, third stage

3 asbestosis, second stage

2 asbestosis, third stage

3 sanatorium study:

1 probable moderately advanced T.B. with questionable silicosis.

1 moderately advanced T.B.

No silicosis.

1 active T.B. with questionable silicosis.

Court hearings attended (1

Superior Court hearing included) 9

Diagnoses submitted from other doctors ----- 6

2 first stage silicosis (early)

3 second stage silicosis (moderate)

1 questionable silicosis in the first stage

The present procedure for x-ray examination of employees in industries having a silica and asbestos hazard is as follows:

1. The medical officer accompanies the x-ray unit to a plant and as each employee is x-rayed he receives a brief medical history, blood pressure reading, and auscultation of the chest. Previous records of examination are reviewed and any findings observed previously are checked. All films are 14 x 17 on previously x-rayed persons. Small films are used on all others.

2. The x-ray unit returns to the central office. The films are developed and screened. When previous films are on file for a patient, these are compared with the current films. All positive films are held for review by the medical advisory committee and are studied in the light of the medical history and physical findings.

3. Work cards are issued to appropriate individuals after the medical advisory committee has reviewed each case having positive findings.

4. Following this procedure, there were examined in 1948, 1122 persons from an estimated 5000 or more employees in industries involving exposure to silica or asbestos. In 1949, 1842 persons were examined. When converted to percentages, the 1948 examinations covered approximately 20 per cent of the exposed group and the 1949 ex-

aminations covered approximately 36 per cent.

In order to speed up the examination of the above group of employees, the following plan is proposed:

1. That a schedule be prepared that will permit the x-ray unit to proceed from one county to another in an orderly fashion so that adjoining sections of the state will be covered one after the other and travel time will be kept to a minimum.

2. That all employees having no previous positive findings receive a miniature photoroentgenogram and all employees known to have a positive film on file will receive a 14 x 17-inch film.

3. No medical examination will be given at the time of x-ray. This should permit the entire state to be covered by the x-ray unit in considerably under one year. It is possible that after the program has been put into use that the 5000-6000 employees in industries having a silica or asbestos hazard will be covered in less than a year since there are only about sixty counties having such industries.

4. All films would be forwarded at regular intervals to the State Board of Health for reading by the Industrial Hygiene staff. These would be examined promptly and in all cases where suspicious lesions were found on small films, the patients would be referred to the health department or the unit would be notified to return to the appropriate plants and secure a 14 x 17 film. All large films would be obtained before the unit moved to a distant point.

5. After the large film had been examined, the medical officer would visit the appropriate counties and carry out a physical examination at the health departments for the persons having positive x-ray findings. His activities would be scheduled independently of the x-ray unit.

6. As the unit visited each county, the local health officer would be notified in advance and the personnel of the unit would be assigned to him for general administrative supervision and would be asked to report daily. Daily reports would also be filed with the

Industrial Hygiene Section. In this way, the unit would be kept under adequate control.

If the above program were followed, the unit would complete a cycle of the entire state in less than a year and the remaining time could be spent assisting in general mass x-ray surveys since these surveys specifically include industries. In cases where the Industrial Hygiene x-ray unit breaks down, the Tuberculosis Section could be asked to fill in temporarily in exchange for the above assistance in general surveys.

After a plant has been surveyed and employees given their physical examinations and x-rays, their medical case records and x-rays are processed by Dr. C. B. Davis, Senior Public Health Officer in our Section. Dr. Davis, former director of Industrial Hygiene, was employed by our Section on July 18, 1949 and is now taking a Public Health course in Chapel Hill. The films and records reveal any suspicious or positive pulmonary pathology resulting from any asbestos or silica hazards are reviewed by the Advisory Medical Committee. The Committee makes recommendations as to whether or not to continue these employees further in their dusty industry. All that are found negative are issued work cards entitling them to continue in dusty trades for the following 2 years. The others that are recommended to be removed from further dust exposure, due to their lung pathology, are informed, by letter, of the Committee's findings and the extent of their lung pathology. A copy of this letter is sent to the employer and the Industrial Commission. The Commission, upon receiving such recommendations for removal of employees, immediately informs them of their legal rights to apply for compensation at which time the proper form for such is forwarded to them. After the employee has filed a claim, our Section forwards the Industrial Commission 5 copies of all his case histories and x-rays given by our Section. The director of the Section appears as witness to testify for any of

these case hearings for the Industrial Commission.

A new Advisory Medical Committee for the North Carolina Industrial Commission has been appointed and approved by the Governor. The members of the new Committee are: Dr. H. F. Easom, (as chairman), Superintendent, Eastern N. C. Sanatorium, Wilson, N. C.; Dr. T. F. Vestal, Superintendent, Forsyth County General Hospital, Winston-Salem, N. C.; and Dr. Hillis L. Seay, Superintendent, Mecklenburg County Sanatorium, Huntersville, N. C. A few of the functions of the Advisory Medical Committee are to handle controverted medical questions, examination and inspection of medical reports, reports to the Industrial Commission including any post mortem examinations, etc.

Engineering: Industrial hygiene engineering activities are presented in statistical form, however, certain phases of the work is believed deserving of more detailed description.

During the first 6 months of the year, it was necessary to function with a skeleton staff of 2 engineers and 1 chemist. All field work was performed by the engineers with the chemist being assigned to the laboratory. On June 25, 1949, a graduate heating and ventilating engineer was added to the staff and began intensive in-service training in fundamentals of industrial hygiene. His knowledge of ventilation, along with some practical experience, should contribute towards this Section's efforts to render industry additional service in the field of ventilation. This is the type service which has always been invited by management of industrial plants, particularly those too small to employ engineers competent of designing exhaust ventilation systems. During the period of training, efforts were directed towards familiarizing this engineer with occupational disease hazards, toxicity of materials, accepted control methods, operation and calibration of field equipment, evaluation of data and preparation of recommendations and reports. Time consumed in travel due to the geographical

distribution of industry in North Carolina remains a major problem and limits amount of services rendered even though every attempt is made to plan surveys in such a manner that a minimum amount of travel is necessary.

Early in the year, there came to our attention the potential hazards of some of the recently formulated organic insecticides now being mixed and marketed throughout the State. Since it is our responsibility to monitor health of industrial workers, we immediately planned investigations as to exposures to these insecticides being experienced by the worker. It was learned that there exists numerous small mixing plants employing from 2 to 40 men. The principal active ingredients being mixed in these plants were parathion, benzene hexachloride, DDT, toxaphene, chlor-dane and rotonone. Other than parathion very little is known about human tolerance of these materials and no maximum allowable concentrations have been established. Recognizing that all potentially hazardous, recommendations were made to management that atmospheric concentrations be kept at the very lowest possible level and that personal contact with these materials should be avoided due to the possibility of absorption through the skin. After visiting all known plants, and in many cases taking atmospheric samples, it was concluded that practically all are furnishing excessive exposures in view of the toxic nature of these materials. Certainly more attention should be given to dust control and better house-keeping in all these plants.

It was in 1949 that industrial hygiene units throughout the nation were alerted to the possible health hazards associated with the use of the commercial x-ray shoe fitting machines being used by shoe sales establishments. In order to conduct investigations as to actual hazards furnished by these machines, it was necessary to purchase a suitable radiation survey meter. The instrument decided on was of the ionizing type capable of measuring both Beta and Gamma radiation, designed for field work. Measurements for x-radia-

tion intensities were taken around 124 machines in stores throughout the State. These measurements were made in order to determine the approximate exposures to x-radiation being experienced by sales personnel. After literally scouring the State locating establishments using these machines and making all necessary field determinations, it was concluded that practically all machines were inadequately shielded and were emitting dangerous amounts of x-radiation in all directions. It was also found that only machines manufactured since January 1, 1949 are properly shielded for protection of the salesman's health. At the end of this study results of these findings and recommendations, along with a printed card to be placed on the machine warning the public, were prepared and mailed to responsible persons. It has since been learned that many establishments are replacing the older and unsafe types with the newer and safer type. It might be said here that this Section has never engaged in any activity which seemed to be appreciated more by people concerned than on this particular work.

Engineering duties assigned this Section by the N. C. Industrial Commission were discharged in accordance with policies agreed on in the past. The prevailing incidence of Silicosis, as shown in medical report, indicates that Silicosis continues to be a serious occupational disease problem in North Carolina. Unfortunately, a lack of compliance with our recommendations over a period of years is largely responsible for these preventable diseases.

Industrial Hygiene Engineering Activities for 1949

I. FIELD

A. Plant visits	282
1. For routine inspection....	85
2. For special Industrial Hygiene Surveys	185
a. Samples atmospheric contaminants collected..	315
(1) Dust	247
(2) Other	71
3. Number workers involved..	10,979
4. Field determinations	662

II. LABORATORY

A. Analyses	318
1. Dust	244
a. Particle count	216
b. X-ray diffraction	7
c. Petrographic	21
2. Other contaminants	74

III. MISCELLANEOUS

A. Reports	184
1. Routine inspections	65
2. Special Industrial Hygiene Surveys	106
3. Monthly	12
4. Annual	1
B. Conferences and Meetings	20
C. Papers Presented	0

No. Plants Served

Type Industry	
Foundry	44
Mining	14
Mineral processing	19
Granite cutting	39
Stone quarrying	22
Insecticide mixing	13
Shoe outlet stores	124
Asbestos textile	4
Cotton textile	5
Electrical equipment manufacturing	2
Dry cleaning	1
Machine shops	10
Rubber	1
Porcelain	1
Battery manufacturing	2
Paper container manufacturing	1
Tunnel	1
Asphalt mixing	1
Tractor manufacturing	1
Furniture manufacturing	2
Mirror manufacturing	1

Number Investigations

Material	
Silica dust	120
X-radiation	124
Glycols	3
Cyanide	3
Trichloroethylene	2
Carbon monoxide	12
Chromic acid	3
Insecticides	21
Benzene-hexachloride	
DDT	
Toxaphene	
Chlordane	
Parathion	
Rotenone	

Nitrous fumes	3
Aldehydes	1
Perchloroethylene	1
Ilmenite	1
Lead	15
Perlite	1
Mica	14
Feldspar	8
Methyl ethyle ketone	1
Vermiculite	1
Pyrophyllite	8
Formic acid	2
Acetic acid	2
Asbestos	8
Zinc	4
Carbon tetrachloride	1
Asphalt	1
Beryllium	1

BUREAU OF TUBERCULOSIS—William A. Smith, M. D., Director

1. ORGANIZATION—The Tuberculosis Control Division in the State Board of Health emphasizes case finding and home follow-up and is one of the agencies in our State Government which has to do with tuberculosis control as a whole.

Those agencies exercising tuberculosis control, who are controlled by the State Board of Health are:

- Division of Local Health Administration
- Division of Vital Statistics and Epidemiology
- State Laboratory of Hygiene and
- Division of Tuberculosis Control

Other state agencies who are included in the general tuberculosis program and who are not under control of the State Board of Health are:

- Department of Public Instruction, which is concerned with Vocational Rehabilitation.
- State Board of Public Welfare, which has to do with the protection of patients against economic distress by cooperation with County Welfare Agencies and
- The Sanatoria Board which controls and State Tuberculosis Sanatoria.

The Division of Tuberculosis Control and the State Sanatoria cooperate in case finding; one agency being under

control of the State Board of Health and the other under the control of the Sanatoria Board. The Tuberculosis Control Division operates mobile x-ray units in the field and makes the first contact with patients found during mass surveys. The Central Sanatorium furnishes the final diagnosis of patients by interpreting the large x-ray films. The large film is made as a result of positive findings in the small film which is the screening film and is taken by the mobile x-ray units in the area being surveyed. The final diagnosis is furnished the local health officer who in turn transmits this information to the patient's physician or to the patient himself.

2. BUDGET—The budget of the Division was \$320,006.76 for the fiscal year ending June 30, 1949, and of this amount \$100,000 was allotted to counties and district health departments for the purpose of local tuberculosis control. The remainder was allocated to this Division and also to those divisions in the State Board of Health which are directly concerned with tuberculosis control.

3. PERSONNEL & EQUIPMENT—During the period covered by this report, the Division operated 8 mobile x-ray units and also cooperated with Duke University Hospital, Durham, N. C., in Case Finding by defraying the expense in installing an x-ray unit in the receiving section of the hospital for the purpose of making chest plates on all persons who so desire it. This x-ray unit has now been in operation since January 1, 1948.

In addition to 8 mobile x-ray units the division owns two generators, a portable x-ray unit, tractors, and other necessary accessories. Personnel consists of 2 doctors, one (1) Senior Stenographer Clerk acting as Chief Clerk in the Central Office, one General Junior Clerk in the Central Office, 2 health educators, one part time consultant nurse, 14 x-ray technicians and trainees, and five other persons, or a total of 19 persons in the field, six in the central office in Raleigh, and one clerk at the McCain Hospital. The clerk at the Mc-

Cain Sanatorium assists in processing records pertaining to the follow-up activities conducted by the Sanatorium.

4. ACTIVITIES DURING 1949—Mass county surveys were carried out in health department jurisdictions named below:

Rowan
Carteret
Craven
Northampton
Beaufort
Hyde
Pitt
Randolph
Moore-Hoke
Alleghany-Ashe-Watauga
Davie-Stokes-Yadkin
Pasquotank - Perquimans - Camden - Chowan

Some schools and colleges are surveyed by special request. Such schools are routinely surveyed if requested by local authorities during mass surveys of a county where schools and colleges are located. Those surveyed by special request in 1949 were:

State College -----Raleigh
St. Augustines College (Negro) Raleigh
Shaw University (Negro)-----Raleigh
Hertford County Schools
Nash County Schools
Washington High School....Raleigh
State College (new students only)
survey carried out September, 1949.
Raleigh
Lenoir County Schools
Madison County Schools
Rocky Mount City Schools
Winston-Salem Teachers College

Winston-Salem
Meredith College -----Raleigh
State Institutions surveyed were:
State Hospital -----Raleigh
Caswell Training School ---Kinston
Eastern Carolina Training School
Rocky Mount
Butner Mental Hospital (N. C. State Hospital) -----Granville County

Special surveys in counties were carried out at the request of local Health Officers. These surveys included chest x-rays of food handlers, industrial workers in both large and small in-

dustries, teachers, school children, barbers, beauticians and other special groups. Counties in which such surveys were conducted were:

Forsyth	Madison
Wilson	Cherokee
Wilkes	Clay
Carteret	Graham

Nash County

City of Rocky Mount

Davidson

In addition to the above, a mass chest survey of short duration was carried out in the Washington-Tyrrell District. The number of films made during special surveys ranged from 1500 to 6900 pictures. A total of 271,556 project films were made by the division and 2417 cases of reinfection tuberculosis were diagnosed and 1545 persons showed other chest pathology.

The 2417 cases of reinfection tuberculosis represent the number discovered in 257,415 project films taken in areas where the follow-up activities were carried out with sufficient thoroughness to determine with accuracy the incidence of pulmonary tuberculosis in the area. The percentage of such incidence is 0.93 which represents persons over 15 years of age and younger contacts.

The 1545 cases of non-tuberculous pathology represent cardiac enlargement, pleural changes, other pathology, and diagnosis reserved. It is interesting to note that in a survey of 30,000 persons in an area of mixed industrial and rural population there were 22 new cases of tuberculosis recommended for hospital care, and 62 cases of enlarged heart were discovered. In a survey of 12,617 persons in an area which is largely rural, there were 20 new cases of tuberculosis recommended for hospital care, and 64 cases of enlarged heart were discovered.

Emphasis is being placed on follow-up activities and a technician and clerk remain in the area for the purpose of completing x-ray and administrative duties incident to the survey after the regular survey has been completed. It is our policy to have the clerk and technician remain in the area until at least 85% of persons recalled for ex-

amination have been x-rayed. This percentage of persons generally report to the Health Department for re-examination, but it had been necessary at times to have the follow-up personnel proceed to the next survey area before completing the full 85% of re-examinations.

BUREAU OF CANCER CONTROL—

Ivan M. Proctor, M. D., Director, Mildred W. S. Schram, Ph.D., Field Director

Operation of the cancer control program has continued as indicated in the Report for 1948. The Cancer Centers functioning increased from the three reported at that time to ten, of which seven are "major" or "combination" centers (for detection examination and for diagnosis) and three are Detection Centers only. Five are in Health Departments, one is in a Court House in rooms just below the Health Department's quarters, the rest are in hospitals.

Centers now in operation are:

Buncombe County Cancer Center
Asheville, North Carolina

Durham-Orange Counties Cancer Center
Durham, North Carolina

Edgecombe-Nash Counties Cancer Center
Rocky Mount, North Carolina

Forsyth County Cancer Center
Winston-Salem, North Carolina

Guilford County Cancer Center
Greensboro, North Carolina

Lenoir County Cancer Center
Kinston, North Carolina

New Hanover County Cancer Center
Wilmington, North Carolina

Jackson-Swain Counties Cancer Detection Center
Sylva, North Carolina

Northeastern Carolina Cancer Detection Center
Elizabeth City, North Carolina

Wilkes-Alleghany Counties Cancer Detection Center
Wilkesboro, North Carolina

The above list means that these free cancer detection examinations are now within 50 miles of about 78% of the population of the State.

There has been rotation of staffs and of Directors in a number of Centers without disturbing their smooth and effective functioning.

During the two-hour Detection Clinic period, forty are examined. The number studied at the Diagnostic Session varies from two or three to many times that number, depending upon findings by the detection staff. In December, 1949, the total number of examinees reached its eleventh thousand.

A few figures may be of interest*: One case of cancer is found in approximately every twenty-five individuals examined. Some 15% of the examinees are men, but 35% of the cancers found have been in men. Slightly under 10% of all applicants for examination are colored—much too small a percentage, since statistics indicate that about $\frac{1}{3}$ of North Carolinians are of the colored race. Disposition of examinees falls into approximate thirds, one-third being entirely well (negative findings), one-third being referred to their personal physicians for care of non-malignant conditions or lesions noted by the detection examiner, the final third being studied at the diagnostic session. All of the latter, regardless of final diagnosis, are referred to their personal physicians for treatment. This means that two out of every three who go to a Cancer Center are potential patients—and private patients, only about $\frac{1}{2}$ of 1% having been referred to Departments of Welfare. All referrals are by letter, and give the diagnosis and recommendations agreed upon by the staff. A number of the examinees were under the age limit of 40 years, having been referred by their physicians, or presenting a valid symptom of malignant disease.

In all Centers, special provision is made for colored examinees, of whom, as noted above, there is not a sufficient percentage. In some Centers, colored physicians and colored nurses serve—

a fact which is reported with interest and pride.

The 1949 State Legislature helped the Division in three ways: (1) made an appropriation for the Cancer Control Program; (2) amended Sub-sections 1 and 2 of G.S. 130-285 (1947 Supplement to the General Statutes), in the interest of broader service in the Centers; (3) passed a law making cancer a reportable disease (Section 130-289.1), the law to become effective July 1, 1949.

Passing of this Law made necessary preparation of (a) a statement for publication in the North Carolina Medical Journal and of letters to all members of the State Medical Society, explaining the Law and requesting their cooperation in making it work; and (b) of a cancer reporting card to be used as a punch card. The response of the physicians has been gratifying, and we are learning much about North Carolina's cancers. For instance, from July 1 through December, forty-four lung cancers were reported by private physicians.

The Division made two contributions to the program of the Annual Meeting of the State Medical Society in May: (1) continuous showing of the film, **Cancer: The Problem of Early Diagnosis**; (2) presentation of the Cancer Control program before the Public Health Section.

Two significant additions to the "screening" program were made during 1949. First, the taking of cervical smears to be studied by the Papanicolaou method at the State Laboratory of Hygiene. The routine was initiated at the Durham-Orange Counties Cancer Center on July 15, 1949, and month by month it is being extended. Eventually the cervical smear will be a part of the detection examination of every female examinee. Secondly, the purchase of the Schmidt-Helm camera and accompanying X-ray equipment for photofluorographic study of the stomach. Since 95% of all gastric cancer cases in the 40-and-over age group are diagnosed too late for any but pallia-

*"Known cancers," i.e., those already diagnosed, are not included.

tive treatment, any practical and speedy method of examining the stomach should be of great value in a mass-screening program. The equipment ordered by the Division of Cancer Control takes seven 70 mm. films in seven minutes, necessitates no undressing, and makes no distressing demands on the examinee other than a fasting period and the drinking of barium. The X-ray and camera will be mounted in a trailer complete with receptionist's desk, sinks, dark room, and heater. The plan is to move the Mobile from one Cancer Center to another, thus make it available to all North Carolinians. Age limit for the Gastric Cancer Survey will be thirty-five, but those younger will be eligible upon referral by their personal physicians.

The Division of Cancer Control has four new members—a junior stenographer clerk; a senior stenographer clerk, a statistician, and an x-ray technician to carry on the Gastric Cancer Survey. In December the latter was sent North to study and observe in Baltimore at the Westinghouse plant (where the equipment mentioned above is being installed) and at the Johns Hopkins University, where the photographic method was originated; and in Philadelphia with Dr. Paul Swenson, one of the pioneers in gastric screening.

Dr. W. W. Vaughan of Watts Hospital and Dr. R. J. Reeves of Duke Hospital have kindly agreed to serve as consultants to this Gastric Cancer Survey, and to interpret the films.

The continuing assistance of other Divisions of the State Board of Health—those of Epidemiology and Vital Statistics, of Tuberculosis Control, of Oral Hygiene, and of Industrial Hygiene, among others—is acknowledged with hearty thanks.

The matter of space should perhaps be mentioned here. From March 1st, 1948, until September 1st, 1949, the Director of Preventive Medicine, at great inconvenience to himself and his staff, contributed an office for the Director of this program. The duties of the clerical staff were carried on wher-

ever a desk or a table could be borrowed. Much of our equipment was in corridors. On September 1, 1949, the Director of Sanitary Engineering generously made available four small offices. These rooms were not only needed by the Division which gave them up; doing so meant downright discomfort to those who vacated them. For us, it meant that at last the clerical and administrative staffs could be together, with all this implies in efficiency and development. Our abundant gratitude continues to these two Directors and their Divisions.

The resignation of Dr. Proctor on November 30, 1949, was a matter of infinite regret to his many friends and colleagues in the field of Cancer Control. All are thankful that he could serve as long as he did, and grateful to him for doing so; and our best and heartiest wishes go with him for many happy years of health and service.

Two authoritative pamphlets, "Cancer Handbook for Dentists" and "Cancer Manual" (for physicians), were made available, upon request, to all members of these professions in North Carolina. The interest in these booklets, as indicated by the response to circular letters enclosing reply cards, was stimulating. 1300 of the Cancer Manuals and 1000 of the Cancer Handbooks for Dentists have been sent out, and a number of requests for the letter remain unfilled because no further copies are obtainable.

No report on the work of the Division of Cancer Control would be complete without recognition of its indebtedness to those who have made its progress possible. And so it is a privilege and a pleasure to record here, on behalf of all these concerned, our deep and abiding appreciation of the splendid cooperation of the County Medical Societies, of the hospital and health department administrations, and, last but by no means least, of the women of the communities who have given so generously of their time, their thought, and their service to make this program a success.

PUBLIC HEALTH PUBLICITY — Mr. William H. Richardson, Publicity Specialist

During the calendar year of 1949, the Senior Publicity Specialist, attached to the Division of Central Administration, made 52 broadcasts over Station WPTF, in Raleigh, prepared and released a number of special Sunday articles for the newspapers and prepared and distributed routine news releases. For the past few years, all news releases have been distributed among the three broadcasting companies in Raleigh, as well as being given to the newspapers and press associations. This has placed news about public health on a parity with that concerning all other matters of interest to the people.

In April, 1949, the Senior Publicity Specialist attended a meeting of the Southern Branch of the American Public Health Association, in Dallas, Texas, following which a report was given the North Carolina public on matters of interest discussed there, in a 15-minute broadcast. In October, 1949 the undersigned attended the meeting of the American Public Health Association, in New York, following which a special broadcast was given over WPTF, embodying interesting features of the New York meeting, and an interview with Mrs. Franklin D. Roosevelt, giving her views on certain phases of public health. She was considerate enough to refer

to the interview in her column, known as "My Day."

Early in the year, the Senior Publicity Specialist made a note of all health legislation introduced in the North Carolina Legislature, and at the conclusion of the 1949 session, compiled a list of all such legislation which passed. He has also assisted in keeping the State Health Department informed on federal health legislation pending.

In May, 1949, the Senior Publicity Specialist was loaned to the North Carolina State Medical Society, to report its annual meeting at Pinehurst, in the press and over the radio. This custom was established in 1938 and has continued since that time, due to the close relationship which exists between the State Board of Health and the State Medical Society.

Through the Publicity Office, other contacts have been made and maintained, in the matter of assisting in the publication of special events, an indication of this appearing in numerous radio scripts and press releases.

In his work, the Senior Publicity Specialist has received the hearty cooperation of all radio newscasters, of the press and of those persons it has been necessary to contact. During the latter half of 1949, he was made an advisory member of the Film and Radio Committee of the North Carolina Resource-Use Education Commission.

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CHAPEL HILL, N. C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

JULY, 1950

No. 7



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SEE PAGE NINE

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
Appendicitis	Infantile Paralysis	Typhus Fever
Cancer	Influenza	Venereal Diseases
Constipation	Malaria	Residential Sewage
Diabetes	Measles	Disposal Plants
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Epilepsy—Feeble-mindedness, Mental Health and Habit Training		
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
Prenatal Letters (series of nine monthly letters).	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
The Prevention of Infantile	One to Two Years.
Diarrhea.	Two to Six Years.
Breast Feeding.	Instructions for North Carolina Midwives.
Table of Heights and Weights.	Your Child From One to Six
Baby's Daily Schedule.	Your Child From Six to Twelve
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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

ACCIDENT PREVENTION AS PART OF THE NORTH CAROLINA PUBLIC HEALTH PROGRAM

By C. P. Stevick, M.D., M.P.H.

Director, Division of Epidemiology
State Board of Health, Raleigh, N. C.

WHY do so many children drown? What is the reason for firearms fatalities? What kind of housing is responsible for the heavy loss of life in burning homes? Why do so many elderly people die as a result of falls? What can public health departments do to prevent these and other types of accidents? What is the extent and nature of the accident problem? These are some of the questions that must be answered in order to develop a satisfactory accident prevention program in North Carolina. Finding an answer to the last question is probably the best means of beginning to find answers to the others.

The Accident Problem

What is the scope of the accident problem in North Carolina? In 1916, the earliest date for which we have records available, there were 3,577 deaths from tuberculosis in this state. This was the leading cause of death at that time and has been the object of a great deal of public health effort through the years. In 1916 there also were 54 fatal motor vehicle accidents and 1,312 fatal accidents of all other types. In 1948, the latest year for which we have complete information, there were 949 tuberculosis deaths, 827 motor vehicle and 1,417 non-motor vehicle

accident deaths. In other words, tuberculosis deaths declined from 142.3 for every 100,000 people living in the state in 1916 to 25.0 in 1948, while motor vehicle accidents rose from 2.1 deaths per 100,000 persons to 21.8, or slightly over ten times as many now as then. Non-motor vehicle accidents have increased at a slower rate than the population, so that the 1916 rate of 52.2 deaths per 100,000 persons is higher than the 1948 rate of 37.3.

In 1916, non-motor vehicle accidents were seventh in the list of leading causes of death for all ages combined, being exceeded in rank by tuberculosis, pneumonia, heart disease, apoplexy, infantile diarrhea, and nephritis, in the order listed. Motor vehicle accidents did not appear in the list of ten leading causes of death for the state in that year. In 1948, heart disease, apoplexy, cancer, nephritis, and pneumonia ranked ahead of non-motor vehicle accidents, which had moved up slightly to sixth place. Motor vehicle accidents ranked ninth on this list in 1948.

If motor vehicle and other accidents were considered to be a single category, the combined total for 1948 would be 2,244 deaths and would be exceeded only by heart disease 8,048, apoplexy 3,355, cancer 2,855, and nephritis 2,431.

Something of the nature of the acci-

dent problem is revealed by studying the leading causes of death by age group. Surprisingly, no age is spared loss of many lives from accidents, not even infants under one year. In this age group of our population in North Carolina, for an average of the four years 1945-1948, accidental suffocation ranked seventh as a cause of death for the combined sexes and races, and conflagrations ranked tenth as a cause of death for non-white males. There is considerable discussion as to the true significance of the infant deaths reported as suffocation. Without a doubt many of these are due to undiagnosed diseases or congenital defects such as of the heart. However great the error in this particular category, there is no uncertainty about the tragic loss of infant lives in burning homes listed as conflagrations. It is noteworthy that the non-white segment of our population contributes disproportionately to these deaths. Housing is involved in many public health problems and conflagrations are an all-too-vivid illustration of this fact.

In infants one through four years of age, the accident pattern reveals more of its details. Even at this young age, motor vehicle accidents rank third as a cause of death when sexes and races are grouped together. Accidental burns enter the picture as the sixth ranking cause of death. Conflagrations are seventh; accidental poisoning is ninth. Drowning is tenth for white males.

In the five through fifteen-year-old group, motor vehicle accidents rank first and the four-year average annual total of 92 deaths from this cause at this age is more than double the second ranking cause, pneumonia, with its total of 43. Drowning becomes more important at this age, ranking fourth. A new type of problem is presented by firearm deaths, ranking fifth, and in a tie for this position with burns. Conflagrations appear in the ten leading causes of death at this age in eighth and ninth places for non-white males and females, respectively.

In the age group fifteen through twenty-four, motor vehicle accidents

still hold the dishonorable position of first place. Drowning ranks seventh; firearm accidents are seventh for both white and non-white males. Air transport accidents also rank seventh at this age for white males. The latter deaths, although occurring among North Carolina residents, largely took place out of the state as a result of military activities.

Motor vehicle accidents are the only types of accidental deaths in the age groups 25 through 44 (fourth place) and 45 through 64 (eighth place). The group 65 years and over brings still another type of accident hazard, namely, falls, which rank eighth.

From this brief review of the vital statistics related to accidents, two points become evident. First, accidents are important as a cause of death and such deaths are equal in number to or even greater than those caused by many health hazards to which we devote much of our public health time and money. As will be seen later in this discussion, nowhere in the country are states spending in their public health programs an amount on accident prevention that even remotely approaches what would be justified by the extent of the problem as compared to current expenditures on certain other public health activities.

The second point brought out is that the accident pattern is complex in regard to its component parts and that there are many of these. Accident hazards differ by age, race, and sex. It is also evident that many other influences such as economic status, educational level, environment, and occupation have an effect on the problems as well as the individual's own accident tendencies. All of this means that a public health program in the general field of "safety" without specificity is useless. Activities must be carefully planned on the basis of the particular aspect of the problem being attacked and the accident prevention program will have to be developed step by step as sufficient facts are secured regarding specific hazards to make effective action practical.

Present North Carolina Public Health Accident Prevention Activities

For a good many years there have been various activities of the state and local health departments in North Carolina that had a direct or an indirect application to the field of accident prevention. These are grouped under the following five headings:

I. Cooperation with Other Agencies.

The first and perhaps the oldest of these activities is the public support of the work of other agencies in the field of safety. Public health workers have served on state and local safety committees and have invited safety workers to participate on various public health committees.

Probably the most far-reaching and effective work in this state in many fields of safety has been carried out by the public schools. Safety is a standard part of the health education curriculum in most grades. Traffic safety has been stressed by schools through various activities such as student patrols at school street intersections and driver-training courses. In this work the public schools have received the cooperation of the state health department and the local health departments in so far as available facilities permitted.

Red Cross water safety work and first aid courses have been of definite interest to public health and have received support through the years. The State Board of Health has joined in the sponsorship of certain state conferences including the Annual Safety School conducted at North Carolina State College.

The official safety programs of the various state agencies, such as the industrial safety work of the Department of Labor and the extensive traffic safety efforts of the Department of Motor Vehicles, have received the cooperation of the State Board of Health in the utilization of certain facilities and information available from the latter.

II. Film Library Service.

The State Board of Health film li-

brary has been growing rapidly and now supplies films on many health topics to health departments, schools, and other agencies throughout the state. Safety is the subject of three films now available, one on highway safety and two on farm accident prevention. Other films are previewed from time to time for the purpose of making additional purchases.

III. Fatal Motor Vehicle Accident Survey.

Beginning about 1940, the North Carolina Motor Vehicle Bureau, the State Board of Health, and the National Vital Statistics Agency instituted a co-operative, detailed reporting system of fatal motor vehicle accidents. Transcript forms are provided by the federal office and information is entered from death certificates. The forms are then routed to the Motor Vehicle Bureau where details of the accidents are entered from reports of the highway patrol. This system provides the source for various national reports and is invaluable in long-range planning.

IV. Fatal non-Motor Vehicle Accident Survey.

The United States Public Health Service, through its National Office of Vital Statistics, has developed a survey form that has been adopted by several states for use in studying fatal non-motor vehicle accidents. This program was described at a state-wide meeting of North Carolina local health officers in the spring of 1950. It was pointed out that the survey forms were to be completed by the local health departments at the places where the deceased persons resided. The program was unanimously approved by the group and was put into operation by the Public Health Statistics Section, starting with the January occurrences.

Two months' receipts have now been secured. Cooperation by health departments is excellent. Of 224 survey forms mailed out, 70 per cent were returned within thirty days and none have been delayed beyond ninety days. A detailed tabulation will not be made before the

end of the first three months of the survey; however, for the first two months tentative reports show that falls have accounted for the majority of the fatalities with burns and suffocation the next largest items. Of the 40 fatal falls reported, 17 were in persons 80 years of age or over, 9 between 70 and 80, and the remainder between 30 and 70.

This program makes available to health departments information about accident fatalities collected by health department personnel and should do much to stimulate staff interest as well as to provide specific guidance in planning local safety work. Copies of the survey records are forwarded to the United States Public Health Service for the preparation of national summaries.

V. Accident Prevention Section.

Effective February 1, 1950, the executive staff of the State Board of Health was reorganized. At that time the Accident Prevention Section was created in the Division of Epidemiology. At present, the activities of this Section are handled by the general divisional personnel, there being no separate employees provided as yet.

The activities of the new Section have been extremely limited because of lack of facilities and probably will be for some time to come. Preliminary observations are being made of public health accident prevention work in general and of possible ways to increase state and local efforts with existing resources. This article might be considered one of the first formal activities of the Section and its preparation may serve to stimulate further planning and provide some degree of orientation. The material in the following portion represents possible future activities to be organized or sponsored by the State Board of Health through all of its divisions and sections, with special technical service from the Accident Prevention Section as it becomes available.

Possibilities for the Future

As in all effective public health work,

the final result of our public health accident prevention program will be solely dependent upon the facilities of local health departments. This will require increased local personnel and training of new and existing workers of all types. It will almost certainly be necessary that accident prevention be incorporated as part of all existing phases of public health work rather than to be established solely as a separate entity.

A new type of public health worker may eventually be needed for safety programs, but existing personnel, such as sanitarians and nurses, if properly trained could make a definite contribution to accident prevention as part of their routine duties in homes and businesses. Health educators have an excellent opportunity available in this field right now, without waiting for the development of future resources.

Training of public health personnel can be done in a variety of ways such as by local staff conferences, district and state meetings, and short courses. Literature of a professional nature will be of help in this training program. Copies of a reprint of the panel discussion on Home Accident Prevention in the May 1950 issue of the *Journal of the American Public Health Association* and of the March 25, 1949 issue of *Public Health Reports* devoted to accident prevention will shortly be mailed to all local health officers in this state and will be made available to other persons upon request. Film strips and movies for training will be used as they become available.

Before many new approaches can be made to accident prevention through public health, much basic research must be done. This probably means the development of a field of epidemiology that, although not new, has not been adequately emphasized. It would appear that public health trained safety engineers are needed in such epidemiological research as well as in actual operation of the programs developed.

Much of the research will probably have to consist of the follow-up of field observations with technical labor-

atory determinations. To select an example familiar to all, we might determine from field observations that a significant percent of dangerous falls takes place in bathrooms. The laboratory follow-up of this would be the development of non-skid floor coverings and bathtub surfaces. As a matter of fact, the entire standard bathrooms interior could probably be entirely redesigned to reduce accidents. The use of a simple foam rubber protective cover around the rim of bathtubs and a permanent non-skid rubber bottom might be easily developed if a little time and effort were made available for research purposes.

Development of basic research and all other types of accident prevention resources must be encouraged by state and local health departments. The United States Public Health Service is in a position to be of invaluable service to the states in developing programs and rendering technical assistance if facilities can be made available. Requests from states will do much toward such a development. Schools of Public Health will presumably adapt their curricula to meet requests for personnel trained in safety work.

Encouragement of film producers and publishers of literature to supply educational materials suitable for public health use is indicated. The development of these materials must await, to a considerable extent, the results of research, in order that their subject matter be sufficiently specific, detailed, and easily applied.

Kansas has led the way in another type of activity that is of great importance and requires only limited resources, that is, the preparation of accident reports of various kinds in a clearly understood and colorful manner. The data presented can be used by many agencies in planning and as educational material. It is hoped that a North Carolina Accident Report can be prepared annually starting with 1950 and that local health departments will incorporate accident facts in their own annual reports.

One field of activity in safety that

can be immediately explored by both state and local public health workers is the coordination and wider use of existing resources. Many health departments may be able to secure more complete coverage in their areas by Red Cross or Y.M.C.A. water safety courses. Local health department support of industrial safety work initiated and sponsored by the State Labor Department is a possibility in industrial areas. The North Carolina Wildlife Resources Commission may be able to help with firearms safety programs in certain areas. Hunting accident prevention suggestions could be incorporated in state and local health educational material with the assistance of this agency. The resources of the National Safety Council may be adaptable to many public health safety activities. The organization of local safety councils could well be initiated by health department personnel. Building code inspection services might be coordinated with environmental inspections by health department sanitarians to reduce fire hazards.

There are probably many other opportunities to secure local expansion of various types of assistance rendered by state and local agencies, both official and voluntary. All that is needed for this is an awareness, by every public health worker, of the existence of the problem and a readiness to take advantage of every opportunity that presents itself.

What Other States Are Doing

Dr. F. C. Beelman, State Health Officer of Kansas, last year published, in the March issue of *Public Health Reports*, a report based on a survey of the accident prevention work being done by the various states. Several questions were asked of the different state health officers and the following is a summary of the information obtained from the more important of these questions.

When asked, "To what extent should state health departments engage in accident prevention activities?" ten states indicated that this work should be a major activity, twenty-seven stated

that it should be a minor activity, three were non-committal, and one stated that it should not be a state health department function.

Another question was, "What is the extent of your state health department's responsibility for accident prevention?" None of the states at that time had a major division with full-time personnel engaged entirely in accident prevention activities. New York was the only state with a minor bureau having full-time safety personnel. Many states have accident prevention work included in various other activities, such as health education, maternal and child health, industrial hygiene, vital statistics, and sanitation. Only two states had no safety activities whatsoever.

The types of state accident prevention work were revealed to be as follows; the number of states rendering the service is in parentheses after each item:


- Special statistical studies (26)
- Organization of local safety councils (6)
- State-wide coordination (4)
- Consultation to other state departments (16)
- Assignment of personnel to other state departments (1)
- Participation in State Safety Council (19)
- Publish special reports (11)
- Publish pamphlets (5)
- Publish posters (7)
- Industrial inspections (18)

- Inspection of public buildings (11)
- Inspection of mines (7)
- Release newspaper articles (27)
- Radio broadcasts (15)
- Talks by personnel (21)
- Distribute films (24).

In answer to the question, "Indicate the number of personnel engaged in accident prevention work," the following information was obtained. Only two states had full-time personnel. Of these, two were employed by one state and one by the other. Two additional states had half-time employees totaling only three altogether. Thirty states had 170 employees devoting a small amount of time to this work.

The amount of money spent by the state health departments was found to be minimal. Fifteen states spent \$1,000 or less for the year reported on. Four spent as much as \$2,000, one \$3,000, two \$5,000, one \$8,000, and two \$10,000.

Dr. Beelman comments on the personnel and expenditure information as follows: "Any state-wide program, to be effective, must have full-time trained personnel, with an adequate budget. In the control of tuberculosis, which kills approximately 50 percent of the number lost through accidents, state health departments are spending more than \$10,000,000 and have a small army of trained personnel of at least 10,000. It would be decidedly interesting to see what might be accomplished if forces of that magnitude were available and functioning in the field of accident prevention."



HOME SAFETY QUIZ

BEDROOM

1. Do you make it a rule NEVER to smoke in bed? ----- YES ☐ NO ☐
2. If you have a gas or oil heater in your bedroom, is the room well ventilated? ----- YES ☐ NO ☐
3. Do you put scissors, pins and needles away, so a baby can't get to them? ----- YES ☐ NO ☐

KITCHEN

1. Do you turn pot handles toward the back of the stove? ----- YES ☐ NO ☐
2. Do you use a sturdy stepladder for reaching high cabinets or shelves? ----- YES ☐ NO ☐
3. Do you stand to one side when lighting a gas oven? ----- YES ☐ NO ☐

LIVING ROOM

1. Do you make sure that rugs do not curl at the edges, and that floors are not dangerously slippery? ----- YES ☐ NO ☐
2. Are firearms kept unloaded and out of reach of children? ----- YES ☐ NO ☐
3. Is furniture arranged so that footstools, light cords, and other hazards will not be tripped over? ----- YES ☐ NO ☐

BATHROOM

1. Do you label medicines properly and keep them out of reach of children? ----- YES ☐ NO ☐
2. If you have electrical appliances in the bathroom, do you make sure that they cannot be reached from the basin or tub? ----- YES ☐ NO ☐
3. Do you have a handhold near the bathtub, and a non-slip floor in the shower? ----- YES ☐ NO ☐

BASEMENT

1. Do you always throw the main switch when replacing a fuse? --- YES ☐ NO ☐
2. Do you keep the basement floor dry to avoid being shocked when handling a light fixture or electrical appliance? ----- YES ☐ NO ☐
3. Do you store all oily rags in a covered metal container to prevent a spontaneous combustion? ----- YES ☐ NO ☐

STAIRS

1. Do you keep all toys, brooms, mops and other articles off the steps to prevent falls? ----- YES ☐ NO ☐
2. Are all stairways well-lighted and equipped with suitable handrails? ----- YES ☐ NO ☐
3. Do you have gates at top and bottom of stairs to keep Baby from falling? ----- YES ☐ NO ☐

Add your YES column, then see front cover

Home safety quiz and front cover by special permission from the copyrighted pamphlet HOME HAZARD HUNT by the Communication Materials Center, Columbia University Press, 413 West 117th Street, New York 27, N. Y.

MID-CENTURY VITAL STATISTICS TRENDS

By William H. Richardson
State Board of Health, Raleigh, N. C.

VITAL statistics in North Carolina for the first quarter of 1950 have been compiled by the State Board of Health. While it has often been pointed out that such figures mean very little for so short a period, yet they are useful for purposes of making certain comparisons.

During the first three months of 1950, there were 26,334 live births in North Carolina, compared with 26,766 for the first quarter of 1949. There is no special significance attached to this comparison. However, here is a total that is significant. During the period under survey, there were only 1,016 deaths among babies in North Carolina under a year old. Last year, there were 1,156 such deaths during the first quarter. This shows a very gratifying decrease. There also were thirty-three fewer deaths attributed to prematurity. There is now every indication that the State Board of Health's program to reduce deaths from prematurity is bearing fruit. For month after month now, there has been a downward trend in deaths among prematurely-born babies. Recent legislation was designed to aid in the reduction of such deaths, by definitely defining prematurity and requiring that premature babies be reported, in order that they might have the benefit of proper care and treatment.

Still births constitute another problem in the realm of maternal and infant health. We shall not undertake to discuss this subject from the standpoint of preventive medicine, as such discussion necessarily would have to be given by a physician and not a layman. However, during the first quarter of 1950, there were 775 still births reported throughout North Carolina, as compared with only 695 during the same period of last year.

It might be well now to turn attention to deaths from preventable causes

in January, February, and March of this year. An analysis of the quarterly report just issued by the Vital Statistics Unit indicates that 711 of the 8,202 deaths which occurred during the first quarter of the year might have been prevented. To the credit of medical science, only seventeen of the deaths from preventable causes were due to disease. This total of seventeen includes six who died of diphtheria, one who died of typhoid fever and ten whose death resulted from whooping cough, which now is classed as a preventable disease. Ten deaths in a quarter would be forty within the year. While whooping cough comes in cycles, and often occurs in epidemic form, let us assume, for purposes of comparison only, that there will be forty deaths from whooping cough during 1950. Twenty-five years ago, that is in 1925, there were 150 deaths from whooping cough in North Carolina.

An even more favorable comparison can be made with regard to deaths resulting from diphtheria. There were six such deaths in North Carolina during January, February and March. If six are reported during each of the remaining quarters, there will be twenty-four diphtheria deaths by the end of 1950. This would compare with 310 twenty-five years ago, demonstrating, without any doubt, the efficacy of immunizing methods now in use. The process of perfecting immunization against diphtheria was not developed overnight. At first, antitoxin was used for curative purposes and to bring about temporary immunization, which lasted usually around four weeks. Later, toxin-antitoxin was developed, to establish a more durable immunization. As an improvement over this method, toxoids were developed and brought into use.

Early in this discussion, reference was made to the distinction between deaths from preventable **diseases** and from preventable **causes**. The statement was

made that deaths from all preventable diseases and causes during the first quarter of the present year totaled 711, of which seventeen were due to acute infectious diseases that might have been prevented. Let us now take a look at the figures relating to deaths from preventable causes other than acute infectious diseases. During the first quarter of 1950, 247 North Carolinians died as the result of automobile accidents, according to the method of reporting used by the Vital Statistics Unit. It is safe to say that, at least, a vast majority of these deaths might have been prevented had the drivers remained sober and refrained from violating traffic laws, and if they had kept their vehicles in good condition. At least some pedestrians killed by automobiles might be living today if they had not taken chances. Deaths from accidents other than those associated with motor vehicles during the first quarter of 1950 totalled 291. Many of these occurred in homes, at places of employment, and other locations. It is also safe to assume that a vast majority of these might have been prevented. There were eighty-two homicides. All of these were preventable, as well as the seventy-four suicides reported during the quarter. But, at that, there was a sharp decline in both homicides and suicides, as compared with the first quarter of 1949, during which 104 persons in North Carolina died of violence at the hands of others, while eighty-one ended their own mortal existence.

Before going to the darker side of the vital statistics picture, let us stop for a moment's further reflection on the facts which already have been brought out. You have been given a broad picture of preventable mortality in North Carolina. Public Health already has attacked all preventable diseases, from the standpoint of preventive medicine, to which it is dedicated. In this, Public Health has worked hand in hand with the practitioners of curative medicine; and the two groups, through combined effort and constant warfare, have all but eradicated many of the ailments

which formerly slew their thousands every year.

But neither Public Health nor organized medicine, singly or collectively, can prevent deaths due to lawlessness, neglect and carelessness. Such reductions must be brought about by education, and by a determination on the part of each individual not to engage in practices or take risks that might result in the death of anyone. Public Health believes that preventable accidents and deaths can be reduced, if attacked from a preventive medicine standpoint. No physical immunization is possible, but the process of enlightenment and reasoning constitute a medium of approach to any problem. The State Board of Health, therefore, is creating a unit designed to make a study of preventable accidents, with a view to doing what it can to help educate the people against those practices which result in the needless crippling and death of others.

We know that homicides, for example, cannot be reduced by the administration of drugs, but we also know that, if we raise our social and economic levels and place a larger emphasis on the dignity of the individual and the value of human life—that this, undoubtedly, will help to remove some of the causes which result in homicides. As to suicides, we know that many of these result from mental sickness, from financial reverses, and from domestic disturbances. Public Health now is engaged in attacking sickness through the application of the principles of preventive medicine. Society is now concerned with efforts to reduce hardships due to economic reverses, while family life is being given close study by welfare, health and other agencies designed to protect our homes and promote harmony therein.

We now turn to deaths which are not preventable, but which constitute more than half of those from all causes in North Carolina. During the first quarter of this year, out of 8,202 deaths, 4,140, or more than one-half, resulted from just three causes, namely, heart disease, which snuffed out 2,359 lives;

apoplexy, which removed 990 by death, and cancer which killed 771. These diseases, of course, are known as degenerative diseases and take their greatest toll among people in middle and late life. They are all being given intensive study, both from a preventive and curative standpoint. We are in no position at this time to make a progress report; but, in conclusion, will say that at least one silver thread that has been run-

ning through vital statistics reports for some time now. Nephritis, or Bright's disease, is also classed as a degenerative disease. But for sometime now, deaths from this cause have shown a sustained downward trend in North Carolina, illustrated by the report of the first quarter of 1950, when there were 542 such deaths, as compared with 641 during the first quarter of 1949.

GROWING OLD GRACEFULLY

From the Weekly Health Bulletin
Connecticut State Department of Health

TO those of us who have completed our first 40 years, more or less, the years from 60 to 80 may seem as far away as 40 did at 20. This may be because our hours are now so full we don't give much thought to facing the problems of old age for ourselves. Or, we may deliberately close our minds to consideration of what life may be like in later years. Yet, on what we do during the next 20 years or so will depend not only our usefulness and our enjoyment of life in years to come, but also our chance of reaching old age and liking it. Now, thanks largely to the spectacular advances in preventive and curative medicine, a steadily increasing number of people are living to old age. Hardly anyone, however, wants life just to be long. Tallyrand made the witty paradoxical statement, "Everybody wants to live long, but nobody wants to be old." More important than adding years to life is to add life to the years. Now is the time to build up resources: emotional and intellectual as well as material.

Transition from Maturity to Old Age

As we grow older our reserves silently and gradually grow less. This depreciation takes place faster in some persons than in others. That is why there can be no fixed dividing line between the ending of maturity and the beginning of old age. Age, more than years, is habits, attitudes, and activities. We carry into

old age all the good and poor ways of behaving which we learned in childhood and early life. If we live up to difficulties, we're not likely to become crotchety overnight when our 60th, or over, birthday arrives.

Just as there is great variability in the effects of aging, so there is no set rule which applies to everyone with regard to living and working habits. If life after retirement is to be active and interesting, the time to get ready for it is well in advance of retirement. To get back into the habit of play—of having an interest outside one's work—is a wise provision. It is not always easy to acquire new hobbies later on in life, so we should prepare early for wise use of leisure time ahead. No matter when we plan to stop working for a living it's wise to remember that the chances of health and happiness at any age are slim unless our day is occupied with activities of either social or personal value.

Keeping Up With The Times

Whether we shall have the satisfaction of being of real use in the years to come seems to depend upon the value placed by our younger contemporaries on the assets we have to offset the liabilities of age. Having these assets appreciated and used will be more likely if we keep in touch with young people and show that we know and respect their points of view. Mental health de-

pend, too, upon keeping in direct touch with human affairs. Age should not ring down the curtain on one's sense of adventure, curiosity and impulse to investigate. The way for a human being to keep from going to seed is to continue to grow and not become fixed in middle life.

Medical Care and Other Services

Medical care in middle age has two aims. The first is prompt attention to illness. The second, important as the first, consists in going to the doctor at regular intervals whether or not there have been symptoms suggesting the need for medical attention.

The need for recreation centers, arts and crafts centers, social clubs, homes and hospitals, bureaus for the exchange of services, etc. for old folks is recognized. We all have a stake in the success of these plans—both because we have older friends and relatives in need of the services offered, and because we may need them ourselves some day. The old folks of the future will be no strangers. They will be ourselves.

Self Responsibility for Satisfaction of Later Life

When all is said, the satisfactions of the "philosophical years" come more largely from within than from without. Even wealth and a robust body can contribute little to happiness if unfortunate habits of mind have warped character. Youth, as a rule, is a time for stirring adventures, great expectations, and frequent and keen disappointment. Maturity may be a time of quiet pleasure: enjoyment of homely comforts and philosophic acceptance of what life has to offer. Despite limitations and complications, the second half of life can become the better half. Whether or not it will be is largely in the hands of each of us for ourselves.

HEALTH INVENTORY AT 40 HELPS PREVENT AGING

Forty is the time to take a health inventory.

At this age, the insidious, progressive disorders so significant in later years

generally first become manifest, according to Dr. Edward J. Stieglitz of Washington, D. C.

Understanding of the science of aging is advancing rapidly, Dr. Stieglitz points out in a report to the American Medical Association Council on Foods and Nutrition which appears in the current Journal of the association. Workers in medicine's newest field, geriatrics, are learning more about the limitations and needs of aging men and women.

"In many respects, the two decades from 40 to 60 are the most significant," Dr. Stieglitz says. "During these years of late maturity we help to determine the future health of the aged. Geriatric medicine, to be fully effective, must be largely preventive medicine."

The actual beginnings of common disorders such as hardening of the arteries, high blood pressure and degenerative arthritis occur far earlier than do their symptoms, Dr. Stieglitz emphasizes.

"The detrimental effects of obesity in the later years of life can hardly be overemphasized," he says. "Extensive studies of the effects of abnormal weight on expected mortality in persons otherwise normal reveal that those 15 to 24 per cent overweight present a mortality of 144 per cent of that expected. Those 25 per cent or more overweight show a mortality of 174 per cent of the expected rate. In the presence of disease of the heart and blood vessels, the hazards of overweight are even more marked."

Good diet is a powerful tool for keeping healthy and vigorous in later years, according to Dr. Stieglitz. Almost all the so-called degenerative diseases have one characteristic in common: impairment of the nutrition of certain cells.

Elderly people are more likely to suffer from lack of protein than from any other deficiency, and lack of protein is a significant factor in development of tissue wastage and anemia. Loss of calcium and phosphorus apparently is a factor in the characteristic wasting away of bone seen in senile persons.

"Unfortunately, the majority of older

persons dislike or resent the prescription of milk," Dr. Stieglitz says. "Milk is not only a valuable source protein but also a major source of calcium.

"Moderate anemias are almost the rule in elderly persons. Milk is ordinarily deficient in iron. A great majority of elderly persons require supplemental administration of iron salts.

"Minor degrees of vitamin deficiency can be assumed to be the rule. Liberal additions of the vitamin B group and vitamin C to the diet of older persons can make for great improvement in general vitality and vigor. Vitamin supplementation through special preparations may be necessary in addition to a well planned adequate diet."

ADVANCES IN NUTRITION PROMISE GREATER VIGOR AND LONGER LIFE

Newer advances in nutrition promise better control of disease, greater vigor and longer life, according to Dr. James R. Wilson, Chicago, secretary of the American Medical Association's Council on Foods and Nutrition.

Enrichment and fortification of cheap staple foods, such as bread, milk and oleomargarine, addition of iodine to table salt and discovery of the B complex vitamins were cited by Dr. Wilson as major achievements in nutrition which are making important contributions to health and vigor.

There is evidence that good nutrition has been important in producing the increase in height observed in the United States during the past 30 years, and that it may play an important role in delaying the degenerative changes of aging, he pointed out.

Practically all scientific knowledge of nutrition is relatively new, he said. The vitamin series dates from the work of Dr. Elmer V. McCollum at the University of Wisconsin in 1909. Dr. McCollum isolated and named vitamin A and vitamin B1. Isolation of vitamin B12 and its use to prevent degeneration of the nervous system in pernicious anemia is an achievement of the last few years.

On the frontiers of nutrition, the

search for additional useful vitamins and minerals continues and research is being carried on in geriatrics (the science of aging) and plant genetics.

Effective application of scientific knowledge of nutrition largely depends on housewives, Dr. Wilson said. As "administrators of civilization" they are important in bringing advances in nutrition into practical use.

Dr. Wilson emphasizes these rules to follow daily for good nutrition at any age above infancy:

1. Eat an egg and at least one serving of another protein food.
2. Use whole grain or enriched bread and other whole grain or enriched cereal products.
3. Make sure the salt in the kitchen is iodized unless you live near the sea coast or eat sea foods liberally.
4. Drink pasteurized milk (a pint for adults, a quart for children and old persons—vitamin D enriched for all persons who get little sunlight).
5. Eat at least two servings of green leafy or yellow vegetables and at least one serving of citrus fruit or tomatoes and other fruits or vegetables containing vitamin C.
6. Use butter or enriched oleomargarine.

A.M.A. COUNCILS GIVE RECOMMENDATIONS FOR IMPROVING NUTRITION OF WORKERS

A three point program for improving nutrition of industrial workers is recommended to industry by the American Medical Association's Council on Foods and Nutrition and the Council on Industrial Health.

The program includes:

1. Use of plant facilities to make available foods well selected and prepared in the light of modern nutritional knowledge.
2. Support of nutrition research.
3. Campaigns to teach how to select a good diet.

These measures, the councils point out in an article in Archives of Industrial Hygiene and Occupational Medicine, published by the A.M.A., are sup-

er to indiscriminate, mass administration of vitamins, a "practice which supports the commercial exploitation rather than the scientific, rational use of these important dietary factors."

Such mass administration of vitamins is unwise nutritionally because special vitamin preparations cannot take the place of valuable natural foods in achieving the completely satisfactory nutritive state, the councils say, adding:

"Concerns that are interested enough to consider spending large sums of money just to buy vitamin pills for their employees could render a valuable service to their industry and section of the country if they would use this money to support research on this question (nutritional deficiency) in their plants.

"Numerous suggestions can be offered for constructive action that business executives might take now in relation to

this question pending the completion of the researches just mentioned.

"Industrial plants might assist more than they do in the educational work that must be done. They might be used for the display of posters and the distribution of literature that teach how to select a good diet. Organizations of employees could well be enlisted in a campaign to educate the individual workers in such matters and through them their wives could be encouraged to attend the various nutrition classes established in the communities throughout the land.

"The use in the plant of machines that dispense bottles of milk could be studied to determine its value for the plant in question. Through health department officials the management of any plant may readily secure advice and assistance in improving the general nutrition of workers."

The 1950 North Carolina Water Works Operators School, Chapel Hill, June 5-9

THE high point of the 1950 session of the North Carolina Water Works Operators School was the three-hour period of lecture and discussion on fluoridation, enthusiastically and ably led by Dr. A. P. Black of the University of Florida, and Dr. Harry A. Faber of the Chlorine Institute. The formal presentation of these two distinguished visiting lecturers of the policies and techniques of fluoridation was followed by a lively discussion in which the chief participants were Dr. M. B. Bethel, Medical Health Officer, Dr. Zachary Stadt, Dental Health Officer, and Messrs. Walter Franklin and R. S. Phillips, Water Department officials, all of the City of Charlotte, North Carolina. Charlotte is the only city in this State which is practicing fluoridation of the public water supply. The experience of these local officials in implementing national policy provided extremely valuable information to water works operators of the State.

A full program of instruction for four

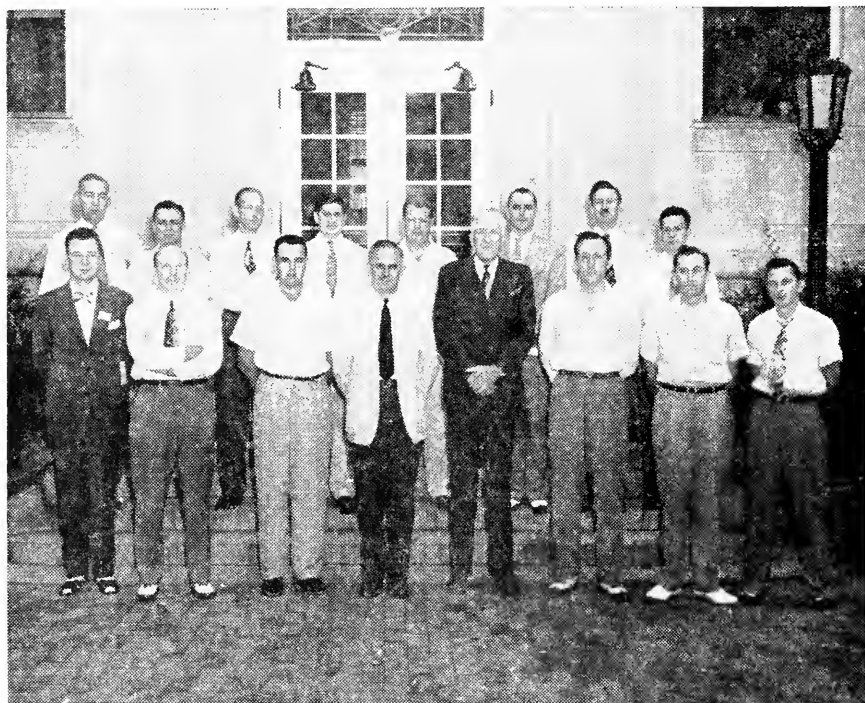
levels of operators was carried on for a period of four days which was followed by a half day of examinations for grading under the voluntary certification plan of the North Carolina Water Works Operators Association. A total of 77 registered students representing the principal municipalities of the State and an encouragingly growing number of the industrial plants which operate their own water treatment facilities. This school was conducted at the University of North Carolina under the auspices of the Institute of Government and the Department of Sanitary Engineering with sponsorship by the North Carolina Water Works Operators Association. Instructional assignments were borne by faculty members of the University of North Carolina and North Carolina State College; officials of the State Department of Health and the U. S. Geological Survey, experienced and well qualified water plant operators, and representatives from manufacturers of equipment and supplies for

the water works industries.

Very excellent contributions to instruction by those from out of the State included presentations by Dr. Ivey Parker, Plantation Pipeline Company, Atlanta, Georgia, who carried on three hours of lecture on Corrosion; Mr. A. E. Griffin, Wallace & Tiernan, on Iron and Manganese Removal; and Mr. Joseph G. Filicky of the West Virginia

Pulp and Paper Company, on Tastes and Odor Control. At an opening joint session of all groups Dr. Cecil Sheps, UNC School of Public Health, and Mr. J. M. Jarrett, Chief Engineer, N. C. State Board of Health, struck the keynote of the session by addresses on the epidemiological and engineering aspects of "The Continuing Job of the Prevention of Water-borne Disease."

WATER WORKS SCHOOL, 1950



Some of the faculty, staff and Association officers—

Front row, left to right: R. H. Teeter, Duke Power Co. Board of Examiners; F. H. Pauszek, U. S. Geological Survey; J. G. Smith, Jr., Wilson, Vice-President; Dr. H. G. Baity, Head of Department of Sanitary Engineering, U.N.C.; Dr. A. P. Black, Head of Department of Chemistry, University of Florida; Stanford Harris, Winston-Salem, President; W. W. Adkins, Asheboro, Board of Examiners; G. R. Reynolds, Leaksville, Secretary.

Back row, left to right: J. H. Henderlite, Wallace & Tiernan Co.; R. S. Phillips, Charlotte, past president; John Andrews, Raleigh; R. H. Culver, N. C. State College; Clifford Pace, Assistant Director of Institute of Government; Dr. Brewster Snow, Duke University; Dr. Emil Chanlett, Department of Sanitary Engineering, U.N.C.; W. C. Gibson, School of Public Health, U.N.C.



The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request !





Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

AUGUST, 1950

No. 8

Mathematics Proves Folly of Fast Driving

	CRUISING SPEED	AVERAGE SPEED	OPERATING COST (1,000 MILES)	DEATH RISK*
	35	34	\$12.95	45
	45	42	\$14.51	61
	55	48	\$16.65	85
	65	53	\$19.43	160 (ALL SPEEDS OVER 60)

* DRIVERS INVOLVED IN FATAL ACCIDENTS PER 1,000 DRIVERS INVOLVED IN INJURY ACCIDENTS.

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The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
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Diphtheria	Pellagra	Sanitary Privies
Don't Spit Placards	Scarlet Fever	Water Supplies
Flies	Teeth	Whooping Cough
	Tuberculosis	
Epilepsy—Feeble-mindedness, Mental Health and Habit Training		
Rehabilitation of Psychiatric Patients		
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
Prenatal Letters (series of nine monthly letters).	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
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Breast Feeding.	Instructions for North Carolina Midwives.
Table of Heights and Weights.	Your Child From One to Six
Baby's Daily Schedule.	Your Child From Six to Twelve
	Guiding the Adolescent

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I. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

A PRIVATE PHYSICIAN LOOKS AT THE HEALTH DEPARTMENT*

BY FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

From at least one standpoint, I am peculiarly unfit to discuss this subject. This is because, since a certain fateful day in December, 1945, when I had a nearly fatal coronary occlusion followed by a series of illnesses requiring a total of 7 hospital admissions within 3 years, I have been forced to limit my work very largely to office work, writing, and teaching, so have not been in contact with many recent developments in the Health Department. Therefore, I shall not attempt to discuss such recent developments, or even the impossible task of trying to discuss all phases of the Department's work, but will confine myself to a few things which I think need our careful thought at this time. I may, perhaps, claim acquaintance with a few matters germane to our subject from both the private and public health sides.

All my professional life I have been sympathetic with public health work. Indeed, when I was a 2nd year medical student at the University of Pennsylvania, the late Dr. Alexander C. Abbott, who was then Professor of Bacteriology and Hygiene in the School of Medicine, so interested me in, and impressed me with, the importance of public health work that I toyed for a time with the idea of going into it as a career. I must

admit also that Dr. Howard T. Karsner inspired me to think of the possibility of pathology as a career, but when I got into the clinical years I was drawn irresistibly towards the practice of medicine as my goal.

In the early years of my practice I had a very brief episode of public health work, in that I served for a week in High Point and Lexington as anesthetist for the State Health Department's tonsillectomy clinics held in those towns.

My most serious public health work consisted of 18 months' full time work for our State Board of Health with the International Health Board of the Rockefeller Foundation cooperating. In 1928 the late and great Dr. Charles O'Hagan Laughinghouse, then our State Health Officer, asked me to give up my practice temporarily to cover the state in a special campaign for periodic health examinations. Before World War I, the top killers of our people were, of course, infections, notably tuberculosis, typhoid fever, and the summer diarrheas of babies. By 1928, however, those diseases had fallen from their notorious summits, to be replaced by chronic degenerative conditions such as various cardiovascular diseases, cancer, nephritis, diabetes, etc. The work took me into every county in the state. The idea was to interest the doctors in examining apparently healthy persons, in order to detect these diseases in their insidious beginnings.

*Read before a meeting of the Guilford County Health Department, High Point, N. C., July 20th, 1950.

All work was arranged through the local physicians, who cooperated so well that actual work was done in the way of holding clinics, talking to medical societies, civic clubs, church groups, teachers' organizations, woman's clubs, industrial and farm groups, the Watauga Club in Raleigh, interviewing editors, ministers, educators, lecturing in colleges, etc., in an effort to persuade the people to go to their own doctors annually for a thorough health examination. We made no effort ourselves to make any mass examinations of people other than in a few places under the direct control of the State, such as the personnel and inmates of the Eastern Carolina Training School in Rocky Mount. Almost always our clinics were mere demonstrations, examining a total of 3 or 4 persons, including, when possible, such people as physicians themselves, editors, educators, ministers, women active in women's club work, etc. who could spread the message abroad after we had left the community, for others to go to their own physicians for this work. When, in examining 436 persons supposed to be healthy we found 1,555 defects, an average of 3.57 defects per person, we felt that we should present our final data in a booth at a Scientific Exhibit of the American Medical Association, and this was done at the New Orleans meeting in 1932.

In 1939 and 1940, during the summer half of each year, I served as Chief of the High Point Pellagra Clinic, made possible by our local chapter of the American Red Cross. The clinic closed in the winter half of the year and closed permanently with the virtual disappearance of pellagra from our community. The City Health Department very kindly furnished us quarters for this clinic.

My last experience in public health work was serving as a clinician in the High Point Health Department Syphilis Clinic, chiefly during World War. II.

So, this might be termed an attempt at binocular vision, in viewing the Health Department from both public health and private practice standpoints.

Such a discussion as this, if it is to be worth anything, must be critical.

Criticism, in its real sense, is neither flattery nor mudslinging—it is an honest effort to appraise values. Being incompetent to appraise all the varied work of the Health Department, I shall attempt merely a few suggestions.

We are advised by the highest authority in the world to cast out the beam from our own eye before we try to extract the mote from our brother's eye. Let us therefore try to look first at the **practitioners** critically, i.e., discerningly.

Are we in private practice doing our duty as guardians of the public health in our own spheres? As a rule, the pediatricians are. Very often, I fear, the rest of us are not. Do all of us diligently and promptly report all those diseases we are required to report by law? I have been fired as family physician for doing this at least twice. Old Dr. Careless never reported such things, so why should I take it on myself to do so? Still, I went ahead and got fired.

The following story was told many years ago regarding a county in a neighboring state. Toxin-antitoxin prophylaxis of diphtheria was just coming into vogue. The state health authorities went into this rural county and began immunizing the children with it. The county medical society rose up in unholy horror and blasted the State Board of Health for interfering with the private practice of medicine. Unfair competition was the hue and cry. The health authorities thereupon agreed to stop that work for 1 year to give private practitioners their chance. **At the end of that year, they found that only 5% of the children in that county had been immunized**, so they went back in and did their job.

Are the medical schools doing their duty in public health teaching? So long as it is confined to their departments of preventive medicine, I think not. Public health practice should also be incorporated into everyday clinical medicine. I wish all students were required to make 3 different types of diagnoses on all patients other than those too desperately sick to permit of it. These types are:

1. **Clinical Diagnosis.** What kind of

disease does the patient have?

2. Personality Diagnosis. What kind of person does the disease have?

3. Public Health Diagnosis. Examples of this would be "Negative", "Needs typhoid vaccine", "Needs smallpox vaccine", or needs whatever kind of immunization it may be, or should use pasteurized milk, better water supply, screen the house, install proper toilet facilities, keep food better, etc. Some of these things may be impracticable for the time being, but they really should be recorded on the patient's case record. When immunization is needed, the doctor may carry it out himself or send the patient to the Health Department. It is far less important to who does it than that it should be done. The Health Department may be able to help in many of the other things that should be done, by giving valuable advice on how to build a sanitary privy, etc.

Now let us turn our attention for a few moments to certain desiderata in the public health officer. He must have tact. He must be able to express himself in both speech and writing clearly, forcefully and attractively. He must get to know his fellow physicians in his territory. He must have self-control and a sense of humor. Finally, he must have character.

Let us examine these points a little more in detail.

The need of tact is obvious, in dealing with the public, members of governing bodies, law enforcement officers and those almost notorious individualists, practicing physicians.

The health officer must do public speaking and write for publication. If he cannot do this clearly, forcefully, and attractively, he will have grave difficulties. If he cannot be heard easily by all, if he interlards an embarrassed "ah" or "er" between every 2 or 3 words he speaks, he will have a profound soporific effect on his audiences. If his mannerisms are so grotesque that they distract the attention of his hearers from his message, that will hurt him. He must not expect his hearers to pay attention—some of them may be Scotch—he must seize their attention and hold it, yet do so by decent and dignified methods.

He should use good English, avoiding the double negative so far as in him lies, for that is the easiest way of saying the precise opposite of what he means.

A health officer should get to know the physicians of his territory as well as possible. To this end he should attend his county medical society meetings regularly. He may not be interested in Dr. Whodunit's operative technic, in Dr. Inventor's new instrument, in Dr. Hardshell's method of applying a plaster cast, or even in Dr. Frederick R. Taylor's ideas about the etiology of pellagra, but that is no excuse for not attending. Very often the informal contacts and personal conversations at such meetings are far more valuable than the formal program. If the health officer holds aloof from his fellow physicians or stands on too much ceremony in becoming acquainted with them, waiting for them to call on him before mingling with them, they may become unjustly suspicious of him because they don't really know him. Then he may, in his turn, develop a sort of persecution complex and feel that every man's hand is raised against him. Lack of understanding can beget hate. It is said that 2 famous friends passed another man known to them both. One friend said to the other, "I hate that man!" "But," replied the other, "you don't really know him." "Of course I don't," agreed the 1st friend. "If I did, I couldn't hate him." There is food for thought in this in both individual and international relations.

To get along with all sorts and conditions of people, some of whom may, at times, become actively hostile, naturally requires the gift of self-control. Few of us are saints, so, to achieve such self-control we require a broad sense of humor as a protective armor against the slings and arrows of outrageous fortune. One of my favorite Lincoln stories illustrates this kind of sense of humor in its broadest and deepest sense. It is said that a very dear personal friend was waiting his turn at the White House to see President Lincoln. Lincoln's fire-eating Secretary of War, Edwin M. Stanton, was doing likewise. Mr. Lincoln's friend and Mr. Stanton

began to converse. Mr. Stanton got emotional about something and remarked, "The President's a damned fool." This shocked Lincoln's friend, for he felt that it smacked of disloyalty on Stanton's part to his Chief. When he went in to see the President, he told him of the incident. "Did Stanton say that?", asked Lincoln. "Yes, Mr. President, he did." Lincoln then quietly remarked, "I'm sorry to hear that, for, if Stanton said that I'm a damned fool, I suppose I must be one, for Stanton is usually right." Such a sense of humor is the perfect antidote for the venom of unwarranted attacks.

It is said that the great international banker, J. Pierpont Morgan, Sr., was once asked to name the 3 best qualities for a young man in business. He replied, Character, character, and character. Character, which in its best sense has been defined as a rightly fashioned will, is the supreme attribute of everyone who has it. While the health officer must be able to compromise on many policies, he must have an inflexibility of character on vital principles. Dr. Edward Martin, John Rhea Barton Professor of Surgery in my undergraduate days at the University of Pennsylvania School of Medicine, once remarked to us: "I hope that every one of you, when you leave this school and become internes, will have graven on your hearts a motto of 4 words: It is **my** fault. Then, whenever you have trouble with anyone from the superintendent of the hospital to the slop boy, consider that motto. Usually it will be true. If so, admit it. If not, and the fight is for decency, right, or the honor of your profession, don't flinch, don't foul; pick your spot and hit hard, and then, for Heaven's sake, get through with it and don't carry a chip on your shoulder afterwards." Good advice for us all, practitioners and health workers alike!

It is my belief that our public health doctors and nurses, like our public school teachers, should be required to attend special training courses at intervals, to keep up with progress in their fields. I would also like to see so-called organized medicine, which at times seems badly disorganized, do more to uphold

certain elementary standards of practice. How often is anything done to disqualify the alcoholic or drug-addict doctor from practicing medicine before he does serious harm, even when everyone knows his trouble. Why is every graduate in medicine who passes his national or state board examinations, licensed to practice medicine and surgery, including major surgery, whether qualified to do the latter or not? What about a surgeon with defective vision, who can't see what he is doing? I knew a man once who did some major operative butchery which passed for surgery, though he couldn't read 15 minutes without the type running together so he couldn't see what he was looking at. I thought his lack of knowledge or things medical in general was stupidity until I learned that he was physically unable to study. Of course he couldn't see what he needed to at operations. No locomotive engineer would be permitted to continue his work with such defective vision. Why should the surgeon, unless he is a genius like, the elder Dr. Crile, who could do marvelous operating by the sense of touch?

What should our **hospitals** do to promote public health that few are doing? I believe they should have, not only medical libraries, but also a public reading room where State Health Department Bulletins, **TODAY'S HEALTH** (formerly **HYGEIA**) and other authentic medical publications for the layman, in addition to certain good books in that field, medical biographies, and essays on general topics of medical-lay interest, should be available to the community at large. In rural hospitals, University Extension clinics and lectures could be given if suitable space were provided.

The Community Health Officer should be a member of the Community Hospital Staff as a Consultant in Public Health. In occasional cases and also in times of epidemics his professional advice would be invaluable. As a Staff Member he could say what he pleased at any Staff Meeting, exchange ideas with other Staff Members. This would increase the close contact with the com-

munity profession so necessary to a health officer.

I think it unquestionable that in the United States we have the finest medical service in the world. It is equally undeniable that constant harping on this fact tends to make us pharisaical and closes our minds to urgent needs. The most brilliant student may head his class without working hard. That is no credit to him. The richest nation in the world may have the finest medical service, but if it falls short of doing its best, that is no credit either. The question "Are we doing better than others?" is completely unimportant. The **all-important** question is, "Are we doing **our best**?"

Certain medical disgraces exist right here in North Carolina. The most important one deals with mental disease. Why must we put violently insane persons in jail while awaiting commitment to a State Hospital? Why are there no local facilities for the temporary hospitalization of disturbed patients that are at once safe for them and not disturbing to other general hospital patients—sound-proofed additions to our general hospitals with proper bars and locks, etc. and made as completely fire-proof as modern building methods can make them?

The problem of alcoholism is a growing menace. The hospital reading room should contain such books as **ALCOHOL, SCIENCE AND SOCIETY**, published by **QUARTERLY JOURNAL OF STUDIES ON ALCOHOL**; Strecker and Chambers' **ALCOHOL, ONE MAN'S MEAT**—, (Macmillan) etc. Alcoholism impoverishes many. I believe the Health Department should include in its activities a group clinic for the psychological reeducation of alcoholics, modelled somewhat after the Yale Plan Clinics. Some states in which such clinics exist have found it helpful in many cases to suspend sentences for alcoholism provided the sentenced person attends such a clinic faithfully until discharged by it. Why shouldn't all states try this?

Another outstanding medical disgrace in this day and time in all of North Carolina, so far as I know, and in

about 90% of the local jurisdictions of the United States, is the outworn coroner's system. A coroner is an elected officer, subject to political pressure. He may be, and often is, a layman. If a doctor, he is rarely well trained in pathology and legal medicine, yet only a real pathologist with special medicolegal training is properly qualified to do medicolegal autopsies. The office of coroner should be abolished, lock, stock and barrel. In its place should be the office of Medical Examiner. All Medical Examiners should be required to be competent pathologists with special training in legal medicine. They should be appointed on a Civil Service basis and be completely independent of political influence. Rural counties could not afford such a man in each county. So, Medical Examiners in a rural state like ours should be appointed by the State Board of Health and cover a district of several counties. With such a qualified man in key cities, say Asheville, Statesville, Greensboro, Winston-Salem, Charlotte, Durham, Raleigh, Chapel Hill, Goldsboro, Fayetteville, Wilmington, Rocky Mount, Elizabeth City, and New Bern, the state should be adequately served. Competent pathologists already exist in most of the above-named towns, and often could be utilized on a part-time basis, Raleigh, Chapel Hill and Durham are close together, but as they all have pathologists with other jobs, why not utilize them for medicolegal work on a part-time basis, at less cost to the state or county needing them?

Such a system of Medical Examiners has already been adopted in several places and found vastly superior to the utterly inadequate coroner system. Among these places are Massachusetts, New York City, Westchester and Nassau Counties in New York, Essex County (which includes Newark) in New Jersey, Maryland, and Virginia.

As an example of the way a coroner untrained in legal medicine and pathology can completely miss the boat, Dr. Thomas A. Gonzales, Chief Medical Examiner of the City of New York tells the following story:

Some years ago an undertaker was

seen walking along a road toward his bungalow on Long Island, carrying a milk bottle. That night the bungalow burned down and a body was found in the ruins. The coroner decided that the undertaker had burned to death in the fire and "signed out" the case. However, an insurance investigator wondered if the milk bottle had not contained gasoline, and called in a pathologist, who found that the dead man had not died in the fire. He had died of pneumonia. There was no soot in his trachea and no carbon monoxide in his blood. Further, it was found that the body had been embalmed before burning, and that the dead man was considerably taller than the missing undertaker. Actually, the undertaker had run away, hoping to cover his traces and defraud

the insurance company by the use of an already dead body. This story is taken from BURNS, G. R.: *Men of Medicine*: Dr. Thomas A. Gonzales, *Postgrad. Med.*, 1950, VII, 455-460.

We are rightly proud of many great developments of our city, county, state and national public health organizations, as well as the great advances in medical research and practice. We are not, however, satisfied, and I hope we never shall be, for self-satisfaction means spiritual and intellectual death. Always, all of us, public health workers and private practitioners alike, must, if we are to fulfill our true destinies, suffer from a chronic, but noble form of discontent which spurs us on relentlessly to further effort and greater achievement.

A WORTHWHILE EXPERIMENT

BY WILLIAM H. RICHARDSON, RALEIGH, N. C.

Four of us sat in an attractive restaurant in the suburbs of Washington, North Carolina, enjoying a sea food lunch which had been prepared to perfection. The group consisted of Mr. Taylor B. Attmore, a prominent Washington automobile dealer, who was host; Dr. J. W. R. Norton, State Health Officer; Dr. Ellen Winston, State Commissioner of Public Welfare, and the writer. The luncheon preceded a visit to a camp for crippled children, on the banks of the Pamlico River, three miles east of Washington. At this point, forty-two children assembled for three weeks in July. But more about the camp a little later on.

As the meal proceeded, our host, who played an important part in raising the necessary funds for this great experiment for the promotion of human happiness, told us the story of what prompted him to proceed with such determination. "When I was a small boy," he went on to say, "my eyesight failed, and I heard the late Dr. Richard H. Lewis of Raleigh, than whom no more efficient eye doctor has ever lived in North Carolina, tell my father not only to take

me out of school, but that I would never be able to resume my studies. The experience did something to me, and can you wonder? I felt I was the under-dog and as time went on, the determination grew within me to do something for physically handicapped children that would help them overcome complexes which so often develop. It was a long time," Mr. Attmore went on, "before the opportunity to do what I had been planning all my life presented itself—but 1950 was the year in which I changed my anticipation into a happy realization."

Life At The Camp

After we had heard the story of Mr. Attmore's part in this great human experiment, we proceeded to the camp site—the four of us. What we saw there not only justified any efforts which Mr. Attmore might have exerted, but also those of his associates, to whom share for the success of the project is due.

When we arrived at the camp, it was the hour during which all the little ones were required to take their afternoon rest. We went through the dormitories, where the happy boys and girls, in their

respective quarters, were stretched out on cots, lying on the floor reading the funnies, and engaged in other restful pursuits. Many wore braces; some on their legs, others on their bodies, but none was conspicuous as an individual. All were exceedingly happy and talked freely when spoken to. Johnny said he liked the camp because he got all the milk he wanted to drink. Mary Ann like it because it gave her an opportunity to find out how other little girls cared for their dolls. Jimmy liked the moving pictures, and so on.

At a designated hour each afternoon, the children went for a swim, or in wading, if they could not swim. All were under strict supervision of one capable of giving them expert protection while in the water. Meals, consisting of food prepared under the direction of a State Board of Health nutritionist, were served regularly. Each evening, the children gathered in a combination Chapel and recreation room for daily devotions.

What Led Up To It

Let us now consider the background of the activities to which we are referring and tell how it all came about. Several years ago, a camp was established in Beaufort County, as a commercial amusement center. It fell into disrepute and was closed, but its physical equipment remained intact. Then, it was purchased by a group of Christians, known as Disciples of Christ, and converted into an assembly ground, to be used for both instructional and recreational purposes. Early this year, the Crippled Children's Section of the Personal Health Services Division of the State Board of Health, directed by Dr. George M. Cooper, Sr., began negotiations to take the camp over and operate it for three weeks this summer, while sponsoring civic clubs were to finance vacations there for crippled children.

The Crippled Children's Section of the State Board of Health was organized fourteen years ago, with funds contributed by the United State Children's Bureau, under the Social Security Act. Dr. Cooper has been Medical Director from the beginning. Clinics have been conducted throughout North Carolina,

with the wholehearted cooperation of every orthopedic surgeon in the State. Thousands of children have had medical and surgical treatment and free hospitalization. Hundreds who appeared hopelessly crippled for life have been rehabilitated and put into useful occupations. The Section has sponsored not only orthopedic, but plastic surgery. All patients have been from needy families and every township in North Carolina. Dr. Cooper said, has provided one or more children as beneficiaries. Thousands of dollars worth of appliances, such as artificial limbs and braces, have been supplied.

The foregoing will explain the State Board of Health's participation in the crippled children's camp, as an experiment in affording pleasure and recreation to the physically handicapped. When the riverside camp was taken over as a religious activity, it was given the name of Roanoke Christian Service Youth Camp.

Three Prime Instigators

Three persons played an important part in providing for the recreation and amusements enjoyed this summer by a selected number of North Carolina's crippled children. These were Dr. Cooper, previously mentioned; Mr. Attmore, and the Reverend B. F. Leggett, Superintendent of the Camp, and representative of the Christian denomination. Correspondence between the last two and Dr. Cooper began early this year. Dr. Cooper visited the camp and saw it in operation during the latter part of last week, and was very enthusiastic over his appraisal of activities in progress there. The camp now has been in operation for crippled children, under the State Board of Health's management, for the full three weeks intended.

It might be well to describe the camp's personnel. It was in charge of Miss Lillie Fentress, a Public Health nurse in the Crippled Children's Section. She has been in charge of field nurses' work for the State Board of Health for several years. Other workers included a physical therapist and nutritionist from the State Board of Health, two local nurses from County health depart-

ments, five counselors selected by Miss Ruth Current, home demonstration agent, one cook and two helpers.

Miss Fentress was responsible to Dr. Cooper and Mr. Leggett, the camp manager. Dr. Cooper said that the recent arrangement was new and that just now no definite plans have been made for another camp next summer. Both Dr. Cooper and State Health Officer Norton are thoroughly sympathetic with this humanitarian venture in North Carolina, and it would be premature to say that serious consideration will not be given to perpetuating the practice. If the way is opened, and it is hoped it will be, the next project will be put into operation in the summer of 1951.

During the recent experiment in human happiness, provision was made for forty-two crippled children, between the ages of six and twelve. They were selected from eight orthopedic clinics, held in the eastern section of North Carolina. The camp committee estimated the cost for each child, for three weeks, to be \$50. These expenses were paid by local sponsoring groups, including the Rotary, Kiwanis, American Legion and Exchange Clubs.

Surgeons Made Selections

The children were selected by the

orthopedic surgeons in charge of the various clinics which they attend. Definite recommendations were written by these surgeons for treatment to be carried out at camp. Up-keep and rent were included in the total cost and paid by the sponsoring groups.

In making his appraisal of his worthwhile venture, Dr. Cooper stated that he wished publicly to commend the services of Miss Fentress who, he said, was due the credit for the idea, the development of plans, and persistence in following through. He also praised the efforts of Mr. Attmore, who gave us both time and money in helping to make the whole enterprise a success. Much credit is due the townspeople of Washington, Dr. Cooper concluded, declaring that they have given much aid in making the stay of these little crippled children happy. "But I cannot end my comments," he said, "without a word of commendation and appreciation for Superintendent Leggett. As I visited the camp last week and saw what was going on there, it suggested a very present interpretation of these words of the Master, 'Inasmuch as ye have done it unto one of the least of these, my brethren, ye have done it unto me'."

MOSQUITOES

BY CHARLES M. WHITE

Director of Malaria Control

State Board of Health, Raleigh, N. C.

Each summer the North Carolina State Board of Health receives numerous questions from people who are bothered by mosquitoes. Typical questions asked are:

"What can I do to get rid of the mosquitoes around my home?"

"If I cut down tall grass and weeds, will it stop the mosquitoes from breeding around my home?"

"How far do mosquitoes fly?"

"Will mosquitoes breed in my goldfish pond?"

"If I spray my porch with DDT, shouldn't it keep the mosquitoes away?"

"How can we keep mosquitoes from

biting us when we sit out in the yard at night?"

All of these questions are difficult to answer. There are so many different species of mosquitoes that information regarding one variety will not apply to all of them. There are more different kinds of mosquitoes in North Carolina than there are different kinds of birds. These differences are harder to see because the mosquitoes are so much smaller. The mosquitoes differ just as much in habits as they do in appearance. Some are found in woodlands, others in open fields, and still others around human dwellings. Some never bite,

others bite only cold-blooded animals, such as frogs and snakes, while most of them feed on warm-blooded animals including man.

People are wrong who think that mosquitoes breed in grass, weeds, and china-berry trees. They are often seen resting in such places during the daytime because of the protection afforded from the sun and enemies.

Breed Only In Water

Different mosquitoes prefer different places, just as the swallow builds her nest in a place entirely different from that of the quail. Some mosquitoes breed in woodland pools, others in large bodies of water; and in ditches, while one very annoying species breeds only in artificial containers, such as cans, flower vases, rain barrels and roof gutters.

The female mosquito lays her eggs on the surface of the water. Within a few days these eggs hatch out into wiggle tails, or larvae. After a few more days, the larvae change into pupae. The adult mosquitoes emerge from the pupae. The length of time required after the egg is laid before the adult mosquito emerges depends on several factors, such as the variety of mosquito, the temperature, and the amount of food available. This period is seldom less than a week and for all practical purposes can be regarded as ten days.

How To Prevent Breeding

The best way to keep mosquitoes from biting is to prevent their breeding. If it is possible to do so, their breeding places should be drained, filled up, or otherwise destroyed. Those mosquitoes which breed only in artificial containers seldom fly over a few hundred yards from their breeding place. People annoyed by this variety usually are raising them on their own premises. In order to prevent the breeding of this mosquito, no receptacles around the premises should be permitted to hold water over a week. When the water is changed in flower vases, care should be taken to remove all of the old water and rinse the receptacle before adding the new water. Roof gutters should be inspected

at regular intervals to determine whether they are blocked up with fallen leaves or other debris and holding water. A very light film of No. 2 fuel oil should be applied to the water surface every week in rain barrels and other containers which cannot be emptied.

Since some species breed in the water in pit privies, a cupful of fuel oil should be poured into the pit every two weeks.

Unfortunately, the control of some species of mosquitoes is more difficult due to their different breeding habits and long flight ranges. In the case of these mosquitoes, the individual can do very little towards keeping them off of his premises, their control is a community problem. Many towns in North Carolina are conducting mosquito control programs through their local health departments. A crew of men devote all of their time to draining stagnate water, cleaning out the ditches, applying oil to water which cannot be drained, inspecting private premises, and searching for and destroying artificial containers. If the town you live in does not have such a program, try to get one started. Your local health officer will be glad to furnish the supervision if the funds are made available.

DDT Best Insecticide

DDT, is, by far, the best insecticide for use against mosquitoes. In applying it as a residual spray, treat all wall surfaces and ceilings, especially in dark corners, behind pictures and furniture and other places where mosquitoes can hide. You should also treat the underside of tables, backs of bookcases and beds, closets, porches and screens. Instructions for applying DDT can be obtained from your health department. Such treatment is usually effective for three months or longer if properly applied.

The control of adult mosquitoes on the outside is very difficult. Even though the porch has been sprayed with DDT, large numbers of mosquitoes will usually be present if many are breeding in the vicinity. DDT has the disadvantage of being very slow in its action. For this reason, new arrivals will be continually

taking the place of those killed off by the DDT.

Space sprays are effective against mosquitoes on the outside if applied often enough. Several devices are on the market which are very good in applying this spray in the form of a mist or fog. The frequency with which

this type spraying must be done depends on the density and variety of mosquitoes as well as the distance from their breeding places.

If you have a mosquito problem, ask your health department to help you in solving it.

BACKGROUND OF PREVENTIVE MEDICINE

BY WILLIAM H. RICHARDSON, RALEIGH, N. C.

Those who are familiar with the Public Health picture know that it is painted against the background of preventive medicine. We know that, through the application of the principles of preventive medicine, diseases which formerly ravaged entire continents now are held to a few cases each year. We know that cholera and yellow fever occurred in the north temperate zone until measures for their elimination were discovered and used. We know that, in the more backward countries of the world, diseases which now are practically unknown in countries like the United States, continue to take their heavy toll.

We hear much about preparedness against aggression. The world saw one of the most flagrant examples of aggression of recent times in Korea. Evidently, the people of Southern Korea were not prepared for the forceful advance of Communists from the North.

Armies, navies and air planes are not the only means of aggression. Certain diseases are aggressors! The United States, today, is just as open to attack by diseases coming in from distant parts of the world as by that insidious evil known as Communism, which has been incarnated in human beings. We are only a few hours distant from any part of the world, by air plane, and it is not at all impossible, according to epidemiologists, for contagious diseases to be imported from any clime. We are not immune to such diseases; but we have, up to now, escaped many of them. It is said that air planes coming to America from certain countries are fumigated, sterilized and otherwise

treated, to prevent the importation of communicable diseases. The study of **tropical** diseases now constitutes an important part of our varied research program in the United States.

More Information Needed

The public, generally, is familiar with the fact that certain diseases are controlled through immunization, sanitation, and other now practical methods; but comparatively few are familiar with the lives and experiences of those who made immunization possible. If you knew that a certain military official had saved the lives of thousands of citizens of an open city, by some ingenious move, you would have great respect for him and rightly so. You would contribute, no doubt, toward the erection of a monument to him. But how many of you know that one man saved the lives of millions of people who, otherwise, would have died of smallpox, since he discovered its preventive toward the end of the 18th Century? That man was Edward Jenner. His gift to humanity was spurned and resisted by the ignorant, for many years. It was only after the public fully accepted it that its real benefits began to accrue.

Do you know why the Grade A. **pasteurized** milk you drink was so named? You know, of course, that Grade A milk is so named because it must pass certain tests. But why is it called **pasteurized**? For the same reason that a mad dog bite need not result in a fatality. The same man who discovered means of protecting the milk you drink also discovered a method of which peo-

ple who have been bitten by mad dogs need not have rabies. That man was Louis Pasteur, a Frenchman, who was born in 1822 and died in 1895, after making some of the most substantial contributions to Public Health ever given the world through human effort.

We were recently reminded of the fact, by Dr. Wingate Johnson, Editor of the North Carolina Medical Journal, that Pasteur's greatest discoveries were made after he had experienced and recovered from a paralytic stroke that rendered him helpless for some years. This observation is made to remind readers that "while there is life there is hope!"

Started As A Chemist

Pasteur started his scientific work in the field of pure chemistry. In 1854, he was appointed to the faculty of the University of Lille. It was here he began one of his most useful studies, centering around alcoholic fermentation. After three years, he reached the conclusion that fermentation is a biological process—a result of the action of minute organisms. Therefore, he concluded, where there are no organisms, there can be no fermentation. This led Pasteur to attack the then prevalent belief in spontaneous generation of life. An important and direct result of this work was the introduction of antiseptic methods in surgery, which has saved the lives of thousands upon thousands of surgical patients. Prior to the development of this discovery, we are told that mortality in surgical cases was shockingly high; the same was true as to maternity cases. Infection during a war killed more soldiers than enemy bullets.

Pasteur's investigations inspired Joseph Lister, an English physician, who introduced the practice of sterilization with carbolic acid during operations, thereby completely revolutionizing surgical practice.

Pasteur not only contributed to human happiness, through his scientific discoveries, but also helped his country commercially. For example, he devised methods to detect and eliminate a disease among worms and moths which threatened to wreck the silk worm in-

dustry in southern France. It was during this investigation that Pasteur suffered a stroke which everybody, himself included, expected to be fatal. However, he made a remarkable recovery and almost completely regained his health. After his illness, Pasteur resumed his old studies in Paris, in 1872. His method of pasteurizing liquids, by heating them to a temperature where little or no loss of the palatable properties occurred, has gained worldwide acceptance. During one stage of his career, Pasteur placed himself at the disposal of French farmers whose poultry was being destroyed by cholera. He succeeded in developing a vaccine which conquered this disease and, thereby, prevented serious economic loss. He was able to demonstrate that the virus, or poison, produced by the minute organisms could be weakened, and that an inoculation with this **weakened virus** would protect against infection, or make the disease less dangerous where infection already had occurred. This same principle is followed in immunization practices today.

He Conquered Anthrax

When Pasteur had conquered chicken cholera, he returned to a study of anthrax, a disease which, although it can be contracted by humans, is thought of in connection with live stock. As the result of his studies of this disease, Pasteur was able to produce a vaccine that broke the grip of anthrax in France.

Then, he turned his attention to the study of hydrophobia—or rabies—with a view to conquering this horrible disease, which is transmitted through the bites of infected animals. We are told that the dreadful nature of this disease, which was quite common at that time, and the complete absence of any hope of recovery, made it one of the most terrifying afflictions known. After lengthy research with dried tissues of infected animals, Pasteur was able to produce a weakened form of the bacilli which could be used as a vaccine. Experiments with animals proved highly successful. The first human life saved was that of an Alsatian boy named

Joseph Meister. He had been severely bitten and mangled by a mad dog. With no other hope of recovery, Pasteur agreed to treat him. The boy was taken to Paris, and on July 6, 1885, received Pasteur's vaccination. Complete recovery resulted. There was not a single complication. Meister later became associated with the Pasteur Institute, in Paris, which was completed in 1888 by public subscription. This institute became a center for the study of contagious diseases.

By this time, the man who made such valuable contributions to the saving of both animal and human life was reaching the end of his earthly road. Although he had many plans which he wanted to carry out, his strength was ebbing and his capacity for work was no longer adequate. He died on September 28, 1895.

"Lives Of Great Men—"

The lives of such men as Louis Pasteur, Joseph Lister, Edward Jenner, and other great benefactors and savers of human life, should be studied in our schools. No education is complete with-

out a knowledge of **why** things are like they are. We study background material in civics, in history and in geography. Why, then, should we not know more about those but for whose discoveries thousands of us would not be living today? Smallpox once was an almost universal disease. Nearly everybody contracted it, at some time or other during a long life. The mortality rate was high. Why should we not know that Jenner discovered means for preventing this disease? Why should our children not know that the milk they drink is free of infection because of Louis Pasteur's work?

While it is true that many scientific discoveries for preventing and curing human ailments have been improved from time to time, yet there had to be a beginning somewhere. Were it not for the crew of workmen who laid the foundations for a sky scraper, the building could never have reared itself heavenward. But for the pioneers in preventive medicine, Public Health could never have reached the place of efficiency and usefulness which it now occupies.

URGES IMMEDIATE FIRST-AID TRAINING IN CARE OF ATOMIC BOMB CASUALTIES

Immediate training of large numbers of physicians or the public, or both, to care for atomic bomb casualties was urged today by Dr. Everett I. Evans of Richmond, Va., member of the National Research Council's Committee on Atomic Casualties.

"If any large American city suffers atomic bomb attack the numbers of burn casualties will tax all preparations authorities are likely to be able to provide," Dr. Evans pointed out in an article in the current (July 29) *Journal of the American Medical Association*.

Dr. Evans is professor of surgery and director of the surgical research laboratories at the Medical College of Virginia; surgical consultant to the Atomic Bomb Casualty Commission (Far East Command), Tokyo, Japan; chairman of

the National Research Council's Subcommittee on Burns, and a member of the council's Committee on Surgery.

It is now well known that the temperature in the immediate vicinity of an atomic bomb burst may rise to several million degrees, and that even in the "outer zone" radiant heat is dissipated in such large amounts that severe burns result, Dr. Evans said.

"A disturbing feature of all disaster planning for burn care is the seeming complexity of this care even when it is reduced to the barest essentials," he continued. "More disturbing is the plain truth that so few physicians and fewer lay persons are trained in even the simplest methods of burn care.

"One can only conclude that unless proper training (along the simplest

lines) of large numbers of physicians and/or the public in burn therapy is instituted at once, the handling of large numbers of burn casualties after bomb attack on any of our cities must necessarily end in complete chaos and panic, with the accompanying inexcusable loss of many lives which otherwise might have been saved.

"The type of trained personnel required for adequate burn care will vary according to the severity of burn to be treated. In the outer zone, the burns may involve mainly the exposed surfaces of hands and face unless they are secondary to ordinary flame. Treatment of such burns can properly be delegated to lay persons. A simple but effective method of treatment to reduce pain and aimed at prevention of infection of burned parts can easily be taught. Training for large numbers of first aid workers requires relatively little effort and would be highly effective.

"In the intermediate zone, more highly trained and larger numbers of persons will obviously be required. Physicians trained in the therapy of shock and application of a dressing will be needed in large numbers.

"In the zone nearest the bomb burst havoc will prevail. Planning for care of the survivors in this zone must be boldly realistic, lest medical efforts completely lose their effectiveness.

"Any calculation, conservative or otherwise, of the numbers of burn casualties to be expected in atomic attack results in requirements for adequate reserves of plasma and/or whole blood in such large amounts as to make it almost out of question ever to expect such supply for immediate delivery to a stricken city. For this reason alone I consider it imperative that search for a safe, effective, easily stored plasma substitute be started at once."

[Promising research in developing a substitute for plasma has been done by a group of physicians from the Mayo Clinic, Rochester, Minn. A preliminary report on their research with Dextran (Dextran Ph, Swedish trade name), a sugar industry byproduct which has been regarded as a nuisance because it

clogs pipes in sugar mills, appears in the current (July) Archives of Surgery, published by the American Medical Association.]

"No matter how lightly or how conservatively one views the 'burn problem' which will confront a city recovering from an atomic bomb attack, the one conclusion permissible is that it will be stupendous," Dr. Evans said. "It may be pointless to refer here to the numbers of trained physicians, nurses and first aid workers necessary to solve this problem. Only free men with strong hearts and wills can accomplish the gigantic task of providing by training and discipline the necessary workers. Provision for this training must be made at once, lest contemplation of the magnitude of the task only encourage despair.

"Adequate and intelligent provision for the care of thousands of burn casualties in any large American city is possible when strong men meet the challenge of this task."

FINDS PERSONS WITH BLUE EYES SUSCEPTIBLE TO CANCER CAUSED BY SUNLIGHT

Blue-eyed persons are more susceptible to cancer caused by exposure to the sun's rays than are brown-eyed persons, a study made by a Santa Monica (Calif.) doctor shows.

Racial stock apparently is an important factor in determining the amount of sunlight to which a person can be exposed safely, Dr. A. Fletcher Hall of the Graduate School of Medicine, University of Southern California, says in Archives of Dermatology and Syphilology, published by the American Medical Association.

Dr. Hall bases his conclusion on study of 100 persons with skin cancer.

"There are certain racial stocks and hereditary complexion patterns in which sunlight is not an important, if any, factor in skin carcinogenesis (production of cancer)," Dr. Hall says. "These include certainly the Negro and Oriental races, probably the Mexican and Mediterranean and possibly all homo-

zygous brown-eyed persons (those who inherited brown eyes from both parents).

"There are certain racial stocks and hereditary complexion patterns in which sunlight is by far the most important carcinogenic factor when repeatedly encountered in erythema-producing (reddening) quantities. These include certainly those of Irish-Scotch-English ancestry, probably the blue-eyed North Europeans and possibly all homozygous blue-eyed persons.

"Observations suggest that the more brown-eyed inheritance a person possesses, the better protected he is from the carcinogenic rays of the sun. Blue-eyed children of blue-eyed parents are, in general, the most susceptible, but many of these are capable of tanning without repeated burning and thus acquire a fair degree of immunity."

DAILY OFFICE WORK MAY CAUSE NECK RIGIDITY AND HEADACHE

Office work literally gives a pain in the neck to some typists and bookkeepers, according to a Chicago eye, ear, nose and throat specialist.

"Numerous headaches are due to prolonged contraction of the neck muscles," says Dr. Noah D. Fabricant in *Today's Health*, published by the American Medical Association.

"Some people's daily work causes an accumulation of pain-producing substances in the muscles of the neck and back," Dr. Fabricant continues.

"A person forced to hold his head rigidly in a particular position may get a headache. Bookkeepers, typists, proofreaders and dressmakers are especially susceptible to this type. They often find comfort in sitting with the head forward, chin in hands.

"Treatment for rigid, hypertonic (abnormally tense) neck muscles consists mainly of heat and massage. Heat can be applied at home in the form of an

electric pad, a hot-water bottle or hot towels, or from an electric bulb with a reflector or an infra-red lamp. Obviously, one must be careful not to burn the skin.

"Physical therapy in all forms must be applied skillfully; otherwise it can do more harm than good."

REPORT NEW TREATMENT FOR CARBON MONOXIDE POISONING

Treatment of suffocation from carbon monoxide gas by injections of procaine hydrochloride, a local anesthetic, is reported in the current *Journal of the American Medical Association* by three Los Angeles doctors.

Seventeen of a group of 23 patients who received the new treatment made good recoveries, Drs. Edwin W. Amyes, John W. Ray and Norman W. Brockman of the College of Medical Evangelists and University of Southern California School of Medicine say.

The remaining six patients either died or did not fully recover. In this group the drug was given long after the exposure to carbon monoxide, or there were additional complicating factors, according to the doctors.

All except one of the 23 patients had become unconscious in a room in which there was no ventilation and where an open gas flame was burning.

Procaine hydrochloride previously had been used by doctors in France to treat prolonged coma due to carbon monoxide poisoning. They reported startling improvement in a few cases, the Los Angeles doctors say. Treatment of this condition theretofore had been unsatisfactory.

Studies indicate that carbon monoxide suffocation results in a disturbance of the blood supply of the brain. The Los Angeles doctors believe that part of the effect of procaine hydrochloride in carbon monoxide suffocation may be due to stimulation of the brain.



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The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

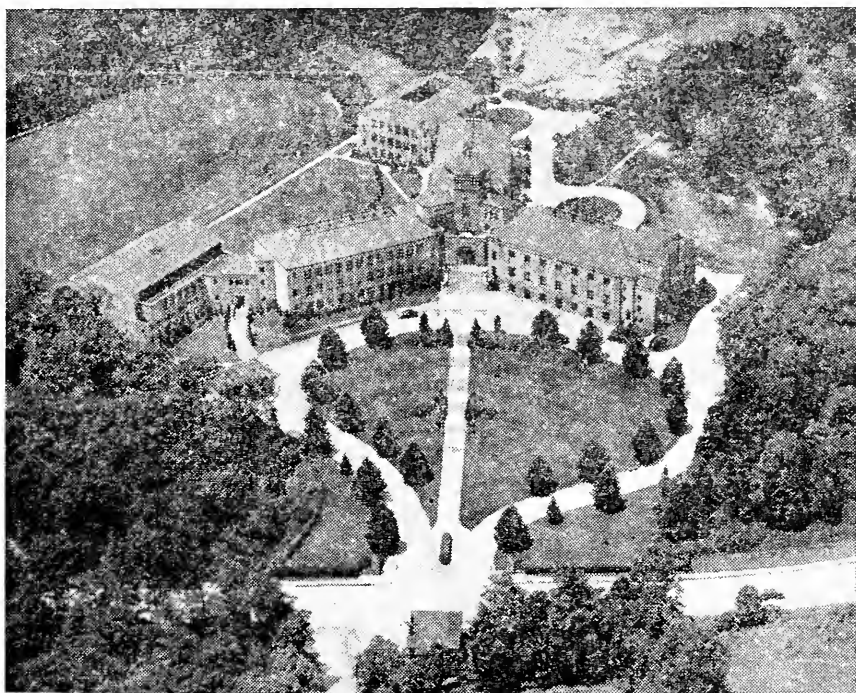
Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

SEPTEMBER, 1950

No. 9



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The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
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The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
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Table of Heights and Weights.	Instructions for North Carolina Midwives.
Baby's Daily Schedule.	Your Child From One to Six
	Your Child From Six to Twelve
	Guiding the Adolescent

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Health Bulletin

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JOHN H. HAMILTON, M.D., Acting Editor

SCHOOL HEALTH PROGRAM

By C. C. APPLEWHITE, M.D.

Director, Local Health Division

School health work has received the sincere attention of educators and public health officials from the beginning of the present century. It was an integral part of the program of the first full-time county health department which was established in North Carolina, and has been incorporated into the routine program of each local health department subsequently established.

However, early in the local health movement, public health administrators decided that some definite action should be taken for the protection of children prior to the school age. Consequently, there was developed a constructive pre-natal program participated in by local health departments and the medical profession, which had as its main objective, safeguarding the lives of expectant mothers and insuring the child of its right to be born with a minimum of hazards. Also, a vigorous infant welfare program was inaugurated by the same agencies for the purpose of protecting the child during the first year of its life. How successful these campaigns have been is strikingly revealed by the marked reduction in the infant and maternal death rates during the past twenty-five years.

For some time, there was a lag in the program designed to promote the health and development of the child of the so-called "toddler age." However, the Parent Teachers Association focused its

attention on this important problem with such enthusiasm that the pre-school conference has now become a routine item in every well operated local health program. The main objective of this program is to provide every pre-school child with that type of supervision which will insure that, by the time school age is reached, it will be free of all correctable physical and emotional defects, and is protected against those diseases for which an immunization agent is available. In this program, the pediatrician and the family physician have played, and will continue to play, an important role. As this particular program is made more effective, school health work becomes easier to put into execution and more far-reaching in its permanent results.

The legislature in 1949 gave a significant impetus to local health service by granting a substantial increase in state appropriation to be allotted to counties for full-time health service, and to school health work in particular, by providing the State Department of Education with an appropriation with which to implement and make more effective the school health program. The State Department of Education and the State Board of Health designed and agreed upon a cooperative plan whereby these increased funds could be used to the best advantage in supplying increased and improved services to

the school population of the state. These funds are to be used for the purpose of securing additional personnel and for the correction of remediable defects. The policies agreed upon and promulgated by these two state agencies were broad and flexible to insure a practical application of them in any county in the state. The responsibility for the successful operation of this program was placed squarely on the shoulders of local authorities who are close to the children to be served and for that reason, are more keenly interested than outsiders could possibly be. This is regarded as a trial run to determine the effectiveness of local democracy.

The results obtained during the first year of operation of the cooperative program have exceeded the most sanguine expectations of responsible administrators of both state agencies. To be sure, misunderstandings and disagreements of minor importance have occurred, and the program has lagged in a few places. These things were to be expected in a program so large in scope and involving so many interested and participating elements. Thus far, no insurmountable obstacles have been encountered which cannot be resolved by the give-and-take policy essential in any democratic program. After the first year's trial run during which probably

most of the errors and faulty techniques were brought to the surface and many of them corrected, it is confidently expected that the program in the future will operate much more smoothly and effectively than it has during the past year.

For this program to operate at its maximum efficiency, real teamwork will be required by all agencies interested in the health, safety, and normal development of the school child, such as educators, public health officials, civic leaders, welfare workers, Parent Teachers Associations, and last but not least, the medical, dental, and allied professions.

The execution of a sane and sensible school health program on a statewide basis is a task fraught with trials, tribulations, and terrific obstacles. Vision, patient persistence, determination, and intelligent leadership are essential requirements for ultimate success. To supply this type of leadership constitutes a real challenge to all of those who have a deep and abiding interest in the welfare of the school child. It is sincerely hoped that all of us will accept this challenge and will be so persistent in our efforts that the results will be a school health program of which the people of North Carolina will be justly proud.

WHAT HAS THE NORTH CAROLINA SCHOOL HEALTH FUND MEANT

By CHARLES E. SPENCER, *Director*
School-Health Coordinating Service

In the first place the State Board of Education School Health Fund, which amounted to \$550,000 each year of the biennium, has meant that thousands of children have had one or more physical defects corrected who otherwise would be still struggling along with these defects. The expenditure of school health funds for correction of defects was limited to those defects that were considered chronic, such as diseased

tonsils, defective eyes, and hearing defects. These are the types of defects that are generally "put off" from year to year by parents who are financially unable to pay for such corrections. Since school health funds could not be used to replace any other fund available for health services, it is a fair statement to say that the correction of defects paid for out of school health

funds would not have been made without this fund.

The corrective program made possible by school health funds has emphasized the need for correction of defects on the part of teachers, nurses and parents. This has resulted in many parents seeking medical services at their own expense. For example, in one county 466 defects were corrected with school health funds and 1073 defects were corrected by parents at their own expense.

Cooperative planning by health and education departments has been one of the outstanding characteristics of the expanded school health program. For many years school superintendents and health officers in many counties have jointly planned the school health program, but during the past year better school health programs have resulted from more cooperative planning by school and health department personnel. In accordance with the recommendation in the joint plan of the State Board of Health school administrators and health officers have invited representatives of county medical and dental societies and welfare departments to meet with them in planning the health service program. According to reports from many counties the medical and dental professions have been most cooperative in working out the details of the health services program. For example, in some counties the fee schedules have been worked out to the satisfaction of all concerned.

The school health fund has given new emphasis to the teacher observation and screening program which is designed to detect signs of deviation from normal. A very important part of the appraisal program has been the nurse-teacher conference following the screening by the teacher. Both teacher and nurse have become more diligent in contacting the home when the medical examination by the physician indicated the need for corrective measures. This has been very effective in counties where nurse and teacher together visited the home. Such visits were made to homes of parents who were able to pay for corrections as well as to those who

needed financial assistance.

In many schools the medical examination program has been stepped up a hundred fold. The examinations have been made by health department personnel, by physicians employed on a clinic basis and by family physicians. For example, in one county the following groups were examined:

1. Pre-school and first grade children missed in the pre-school clinic.
2. All third, sixth, ninth and twelfth grade pupils.
3. Those referred by teachers and nurses because of apparent deviations from normal.

The school health fund has made possible the expansion of the hearing conservation program. During the past year approximately 40 counties have purchased audiometers and have employed personnel to conduct the hearing testing program. Hundreds of children have been found to be hard of hearing. Some of these have been corrected. In many cases adjustments were made in the school program. Often the simple procedure of moving the child to a position in the room more favorable for hearing has resulted in considerable improvement in the child's school work.

Health is beginning to be accepted as a vital part of the school program. Health was set up as the first objective of education as far back as 1918 as the first of the now famous Seven Cardinal Principles of Education. However, in practice the health of children has been neglected in too many places. During the past year there was considerable evidence that health is becoming more and more functional and less and less an academic matter. Teachers, for example, are more interested in the health of the individual child and are putting less emphasis on purely textbooks teaching. Emphasis in the present program is being placed upon:

1. Maintaining and protecting one's own health.
2. The use of private and public health services.
3. Improving the health of the home, schools and community.

While the school health fund has contributed in a large measure to the school health program, it should not be overlooked that other factors have favorably influenced it also. Some of these other factors are:

1. The health education curriculum project has provided opportunities for many teachers and administrators to study their school health problems. One hundred and ninety-two local committees participated in local studies and cooperated with the State Central Curriculum Committee in the preparation of a Health Curriculum Guide to be published by the State Department of Public Instruction.
2. Better trained teachers have been employed in both city and county schools. The number of health and physical education teachers employed in the state has doubled in the last four years.
3. Health educators and health supervisors, who have been employed in increasing numbers in the last several years have greatly stimulated the interest of school and lay people in the health of children.
4. Health departments have improved and increased their health services to schools. This was made possible by an increased state appropriation by the last General Assembly.
5. The programs of in-service and pre-service education of teachers in the fields of health have been improved and increased.
6. Since the war and especially during the past two years many schools have improved such health facilities as sanitary toilets, artificial lighting, approved drinking fountains and emergency care and

clinic rooms. The light has actually been turned on in thousands of classrooms heretofore in semi-darkness. One county spent \$35,000 on improvement in lighting. Outdoor privies, acceptable in many places only a few years ago, are now considered a disgrace.

7. The school lunch program has greatly improved the nutritional status of thousands of school children in North Carolina.

North Carolina has taken a great step forward in appropriating funds for school health. In some instances the program has been limited because health personnel could not be secured. In other cases the funds available were not adequate to do the job. However, in the vast majority of the counties and cities, through the cooperation of schools, health departments, welfare departments and the medical and dental professions better health of children has been achieved.

Of the \$550,000 allocated for school health the first year of the biennium \$296,012.14 was budgeted for correction of defects. Listed below are the items of expenditure made out of State Board of Education school health funds showing the amount budgeted for each item.

Nurses	\$ 61,988.75
Health Educators	24,101.05
Physicians	3,024.65
Dentists	7,572.00
Travel for all Personnel ...	24,914.82
Technicians	16,862.00
Clinics	31,837.37
Correction of Defects	296,012.14
Supplies	26,900.60
Equipment	53,172.60
In-Service Training	3,649.94

\$550,000.00

MAINTAINING AND IMPROVING MENTAL HEALTH IN THE SCHOOLS

By R. M. FINK, Ph.D.

Consultant in Mental Hygiene
School-Health Coordinating Service

Education for mental health is concerned with aiding an individual to

live *happily* and effectively with *himself* and with *others*, in a *changing society*,

at the particular *stage of growth* through which he is living.

Education for mental health takes place in every phase of life. The home is, in most instances, the greatest influence in developing emotional maturity. The church, the neighborhood, and other community forces also have strong powers of education for mental health. But it is in the school that a planned program for the development of healthy personalities is most likely to be found. The school cannot substitute for the home and community—it can cooperate with and add to home and community experiences which maintain and develop mental health. But the basic responsibility for the emotional health of children rests with the parents.

From the first grade through the twelfth, in the formal question and answer period, in the informal student committee meetings, in the relaxed atmosphere of the playground, schoolday experiences promote or retard the development of emotional health. Children can learn a multiplication table, to read a newspaper, to plan a personal budget, and to be critical of propaganda. As they participate in such activities they can also learn to understand themselves—their emotional, social, physical and mental abilities and potentialities. They can learn how to use these capabilities productively, to develop satisfying and socially acceptable personal security free from excessive feelings of fear, guilt, hostility and competition.

Children grow in emotional maturity in an atmosphere of acceptance and understanding—"love me not because I'm good or bad, but just because I'm me."

Children grow in emotional maturity in an atmosphere in which they are guided to assume increasing independence of thought and action.

Children grow in emotional maturity under the guidance of adults who are emotionally mature.

Primarily, then, mental health is maintained and developed by the nature of the experiences which teachers and pupils have together—regardless

of grade level or course content. As children grow older there are some opportunities to teach content material about mental health, but even then content is secondary to living in an emotionally healthful atmosphere.

Some Factors Which Promote

Emotional Growth

- I. Normal Emotional Growth Is Aided by Teachers and Administrators:
 - A. Who are emotionally mature.
 - B. Who can accept every child as a worthwhile person regardless of his appearance or behavior.
 - C. Who understand the patterns of growth of children.
 - D. Who can accept normal childish behavior.
 - E. Who have a deep understanding that children are different and who apply this understanding in teaching.
 - F. Who understand that a child reacts to his total home, community and school environment; who knows that he can be understood only in terms of his total environment.
 - G. Who live a wide variety of social, emotional, physical, and mental activities.
 - H. Who are in good physical health.
- II. Normal Emotional Growth Is Aided by an Atmosphere in Which:
 - A. Children have opportunities to make many decisions and to act on them—even though they be wrong sometimes.
 - B. Children have considerable control of their personal property, time and energy.
 - C. Children have many opportunities for sharing.
 - D. The school provides for individual activities, small group activities, large group activities.
 - E. The school provides for activities which promote normal sexual development.
 - F. Children are encouraged to examine the pleasant and the unpleasant phases of life, and controversial issues.
 - G. The school program is flexibly organized. It is not overly rou-

tinized so as to minimize opportunities for decisions and problem solving.

H. Children have opportunities to work and play in a wide variety of physical, social and mental activities.

I. The concept of good or bad, of right or wrong, as applied to children and their activities is tempered by an awareness that our ideas of good and bad are not always fixed and final, but are slowly changing.

Some Factors Which May Prevent Or Retard Emotional Growth

I. Normal Emotional Growth May Be Prevented by Teachers and Administrators:

A. Who are emotionally immature.
B. Who feel they must constantly domineer over other teachers or over pupils.

C. Who are obsessed with compulsions for extreme neatness, quiet, and regimented order.

D. Who constantly nag children concerning minor details.

E. Who expect children to behave as adults.

F. Who value a child's person in terms of his appearance or behavior.

G. Who live restricted social, emotional and intellectual lives.

H. Who do not understand their own frustrations and hostilities.

I. Who live in communities where rigid social and economic standards for teachers are constant inhibiting factors.

J. Who are in poor physical health.

II. Normal Emotional Growth May Be Prevented in an Atmosphere in Which:

A. The school and the classes are conducted autocratically.

B. Children are constantly told what, when, where, and how to do.

C. Inflexible standards of work, achievement and behavior are set up for all children to follow.

D. Marks, examinations, and standards for promotion control classroom activities and develop an exaggerated spirit of competition.

E. Learning activities are predominantly aimed at memorization and recall of organized facts.

F. Unpleasant realities of life are avoided in instructional activities.

G. Organization and administration are important as ends.

H. There is excessive emphasis on good and bad or right and wrong.

I. Children are overprotected.

Note: The above paragraphs are excerpts from the mental health section of the forthcoming State curriculum guide for health instruction. Other sections suggest specific classroom activities to develop healthy personalities.

BUILDING GOOD WORKING RELATIONSHIPS WITH THE MEDICAL PROFESSION

By FRED V. HEIN, Ph.D.

Educational Consultant in Health and Fitness

American Medical Association, Chicago, Illinois

(Presented before the North Carolina Conference on Health and Physical Education, Chapel Hill, N. C., December 9, 1949.)

Among the physicians in the United States are several thousands who serve schools and colleges in various capaci-

ties while nearly all practicing physicians are involved in school and college health education programs less directly as medical advisers to students and their families. Many physicians also serve on school boards, boards of trustees and other groups concerned with education. For these reasons, the Amer-

ican Medical Association, its state and territorial associations and the component local medical societies are interested in the health programs of educational institutions at all levels.

Tangible evidence of this concern was shown in the organization of the Joint Committee of the National Education Association and the American Medical Association on Health Problems in Education in 1911. Perhaps the outstanding contribution of the Joint Committee is the book, "Health Education," but "Mental Hygiene in the Classroom," "Health Appraisal of School Children," "Sanitary Requirements for School Lunches" and "A Nutritional Program for Schools" are almost as well known. Forthcoming publications include a manual on "Health Problems in Physical Education" and "Health Conditions Affecting the Personality of School Children."

Another illustration of interest in school health and physical education was provided when two consultants on health and fitness were added to the staff of the Bureau of Health Education of the Association in 1945. These consultants are primarily concerned with assisting state and local communities in the development and expansion of the school health and physical education program. A great deal of their time is spent at meetings and conferences of medical, educational and health groups with the objective of bringing about better understanding and improved relationship between medical and other personnel concerned with school health and physical education problems.

A further practical demonstration of the desire of the medical profession to cooperate in improving health and physical education in the schools were the 1947 and 1949 Conferences on Physicians and Schools sponsored by the American Medical Association and held at the Hotel Moraine in Highland Park, Illinois. At the last conference, state departments of education, state departments of health, state medical societies and national agencies sent some 160 delegates, representative of 115 agencies and organizations. The participants

came from 36 states, 3 territories and the District of Columbia. The work of the conferences was directed toward planning practical ways and means of carrying out health and physical education policies at the state and local level.

One of the current activities of the Bureau of Health Education at the A. M. A. is a survey being conducted on school health in cooperation with the U. S. Office of Education. We have in mind that this study may provide useful information about local policies and procedures and indicate desirable practices in matters related to school health and physical education. I would also like to call your attention to the nationwide broadcasts sponsored by the American Medical Association through its Bureau of Health Education. School health and physical education have had an important place on the schedule. The programs have included such subjects as health examinations, excuses from physical education, junior high athletics, girls in interscholastics and health teaching in the schools.

HYGHEIA, The Health Magazine, a publication of the American Medical Association since 1923 which interprets health progress to the public will shortly appear under new editorship (Dr. W. W. Bauer, Director of the Bureau of Health Education) and with a new title "Today's Health." As in the past articles and features on school health and physical education primarily directed to parents will appear in the magazine. The Platform of "Today's Health" will contain the following two planks among others

5. "Health education and health protection for every school child."
6. "Physical education properly adapted to the needs of all school children."

The National Education Association and state education associations are also playing an important role in attempting to build good relationships with the medical profession. Cooperation at the state and national level has been good and is becoming even better. It is at the local level, however, where the

greatest efforts are needed to promote close working relations between the professions concerned with the health of the school child.

If physicians and educators are to work together effectively, both must earnestly try to see the problems involved through the eyes of the other. This is not always easy to do since medicine and teaching are conducted under totally different conditions with medicine emphasizing private practice and the schools being conducted under public auspices. One of the ways that any two groups can obtain a common understanding is to sit down together and discuss their problems frankly. If the school administrator will try and arrange meetings with representatives of the local medical society to discuss questions of common concern in health and physical education, a big step will have been taken in the right direction. The formation of school health committees in state and local medical societies is being encouraged nationally and from a state level. but the greatest stimulus to such a development will be a request from local educational authorities that such a move be made.

Once a meeting is arranged, the approach to the problems involved is all important. For example, if the school people are interested in developing a program of health examinations it would be neither democratic or diplomatic to have plans formulated previous to the meeting. When that is done you are in effect saying, "Here is the way we are going to do it. Now you cooperate with us." But another method will work. In this approach no one comes to the meeting with a preconceived plan. The problem is presented somewhat as follows: "We would like to have a medical examination for the children in our schools about four times during the school years, according to national recommendations. How can we the physician and the school people work out the best way of doing this in our community? What kind of plans will we need and how and where should the examinations be made."

When plans arise from cooperative

enterprise of this kind, those concerned will cooperate in carrying them out because they have shared in the planning. The compromise that takes place will be more than offset by the improved relations. Incidentally, along the way the physicians gain an insight into some of the health problems of the school, while the school people become acquainted with some of the difficulties the doctor faces in his private practice.

In addition to a committee from the medical society a more comprehensive organization of all local agencies interested in school health will prove worthwhile. Such a group may be organized as a school health council or a section or committee of a community health council. A health council is simply an orderly way of getting together the representatives of those concerned with school health to plan intelligently for the coordination of health efforts. Besides school people, there should be representatives of parent teacher associations, the local health department, the medical and dental societies, the various voluntary health agencies and the civic groups in the community with a continuing interest in health. When all of these agencies and organizations have a chance to participate in planning and carrying out the program, the agreed-on procedures have a real chance to move along smoothly.

In many communities a doctor on the school board has helped materially in improving school health and physical education programs. If he as a physician has the respect of his colleagues, he can be a powerful force in helping toward the development of an effective health and physical education program in the school. His primary interest in health and his ability to interpret the activities of the school in health and physical education to the other doctors in the community can be very helpful. Sometimes too he can be effective in stimulating the interest of a school administrator who has not been too enthusiastic about school health and physical education.

In other communities informal relationships between the professions

have been very worthwhile as a means of promoting harmony in relations. For example, if for one reason or another it is not always feasible to get doctors and educators together for discussion, the avenue of correspondence is always available. While this channel is certainly not as satisfactory as direct contact, it can be helpful. For instance, if the school wants to work out a procedure for handling the excuse problem in physical education, a letter might be sent to doctors in the community telling how the problem had been handled in other places and enclosing a form that had been used in some other community. The letter could go on to ask for suggestions or modifications which would fit the needs of the local situation.

A good way to get acquainted with physicians is to consult them through appropriate channels about health problems of individual children. For example, the doctor whose child patient returns to school after an operation might be called and asked when physical education activities could be started, and what he recommends as restrictions on other school activities upon return to school. Any other device by which appropriate personal contact can be made between school people and the practicing physicians in the community will be helpful in improving relationships. It is, of course, unnecessary to remind you that in making contacts with individual physicians it is important to avoid office rush hours.

In building good relationships it is most important that the role of education in health be stressed. Educators turn to the physician for medical guidance, but remain secure in the knowledge that they have skills in education which are worthy of as much dignity and respect as those in medicine. The physical educator with a stethoscope around his neck is just as incongruous as a doctor would be with a basketball under his arm. In line with this philosophy, it may be worthwhile to point up a few matters as they relate to our place as educators in the health service program. This may be

a repetition of well-known facts to most of you, but it is so easy to fall into the trap of practicing medicine without intending to do so that a little repetition may be worthwhile.

The teacher's job in working with children with health problems is never one of diagnosis. It is at times one of detection of changes from normal appearance and behavior; the physical education teacher, for example, is in excellent position to notice the varying reactions of children to exercise. The classroom teacher is in a strategic position to detect possible visual defects or hearing loss. At other times, the teacher's job becomes one of evaluating educational progress in relation to health. In other words, if a child fails to improve as might be expected, fails to develop needed skills or in physical activities shows an unusual amount of fatigue, he may need to be referred for medical investigation to discover whether or not there is anything wrong with his health.

If educators are to merit the confidence of medical personnel, they must respect the confidential nature of any information that may be given to them about the health problems of children. Even when such information may not appear to be socially damaging, it may have important repercussions on mental and emotional health. In this connection too, we must remember there are certain restrictions, legal and otherwise, on revealing so-called privileged information.

In counseling children and parents it is very easy to suggest the name of a favorite physician or one whom we consider especially competent. Remembering that physicians are engaged in competitive practice we should realize that this is no more ethical for us as educators than to advise the child as to the store where he can buy the warmest or best clothing. While the case is not quite parallel, imagine the implications if a doctor were to recommend some particular teacher over others for the children in his care.

Some of us at times have become enthusiastic about certain remedies; for

example, some of those sold through expensive advertising and clever salesmanship for the prevention and treatment of so-called athlete's foot. We should never suggest to our pupils any substance which has not been proved and accepted by reputable medical investigation any more than we would expect a physician to suggest to his patients the kind of teaching methods that would be acceptable in physical education.

No one can anticipate all of the individual problems in relationships which might develop in any given community. One can suggest general principles that will apply to problems in interrelationships between the medical and education professions for they are the same as these found in any human relations. In general, it can be said that such cooperation must always be a two-way process; it involves mutual respect for the problems, interests and abilities of the other. We must try to see the problems of the physician through his eyes; while at the same time helping him to visualize the health problems of the school as they

appear to us. We must be certain that whenever we are involved in a cooperative enterprise that those who are to work with us share in planning how the expected cooperation is to take place. Last but not least important, we must delineate our responsibilities on the basis of our experience and background so that medical functions and methods are made the responsibility of the physician, while the equally important educational responsibilities are reserved for us trained as school people.

Much needs to be done at the national level and I have tried to outline for you some of the things that are being done. It is a long-term job. Gradually some of these things will trickle down and be of help to you at the local level, but the job in human relations has to be done at the grass roots. The work that actually touches children is there. The knotty problems which are a part of working together are there. And the credit for any success achieved in improving child health through better school programs in health and physical education programs will also belong there.

PHYSICAL FITNESS

By RUTH MOORE DAVIS

Adviser in Health and Physical Education
School-Health Coordinating Service

Once upon a time, as the story goes, our forefathers landed at Plymouth Rock and began to settle this great land of ours. Little thought was given to their state of physical fitness. Their need for developing physical fitness was met to a great extent in everyday living. Today, our world has changed. Progress in science and social organization has completely changed our way of life. We are slaves to gadgets—we perform our daily tasks and earn a livelihood with little expenditure of physical energy. In this atomic age we wonder if in the future the energy of the atom can be harnessed to run our factories and industries. Let us not

forget one thing that certain muscular energy will always be indispensable to man.

What do we mean by physical fitness? The term physical fitness implies freedom from disease or significant deviations from the normal structure and function; sufficient strength, speed, agility, endurance, and skill to do the daily task; mental and emotional balance; and flexibility appropriate to the individual. Fitness has limitations imposed by inheritance but within these limitations daily living practices may develop and otherwise influence fitness. The greatest resources of a nation are

individuals who possess vigor, strength and character.

Everyone needs physical activity to grow properly or keep healthy. A person develops as he exercises his body and mind, as he gains new ideas and skills and as he applies his knowledge and skill effectively.

We can help to overcome weakness and acquire physical fitness through a broad program of physical education activities. The American Association for Health, Physical Education and Recreation and the Society of State Directors have jointly worked out the following platform of physical education which should be of help to school administrators, teachers, parents and lay people in planning and carrying on a physical education program which will develop physical fitness.

**Platform for Physical Education*

FOR every person there should be opportunity to gain the values of physical education by taking part in activities selected according to his interests and according to his needs—as shown by a medical examination and other ways. Everyone should be encouraged to take part regularly in a variety of activities appropriate to his age, physical condition, abilities, and social interests. Participation should be aimed toward achievement of the values discussed in the section on Meanings and Purposes.

A thorough medical examination should be one of the main bases for the selection of physical activities for all persons. Children and adults should have a medical examination every year, if possible. The school health program should call for a periodic examination at a minimum of every three years with additional provisions for special examinations of those who seem to need additional medical attention, and of participants in vigorous competitive activities. Proper use of results of these examinations should bring about the

maximum physical development of each child and youth and the maintenance of fitness of the adult.

IN every community all possibilities for physical education should be developed—Good schools, in making the most of the educational opportunities of physical education, provide guidance, a well-balanced varied program, and indoor and outdoor facilities, equipment and other “teaching tools” adequate for full participation. Community and school facilities for recreation should supplement each other, should be adequate in amount, and should be used efficiently to serve the needs of all child, youth, and adult groups in a constructive program of activity. The program should be carried out in accordance with the sound principles of physical education. The physical education environments should be established and maintained with full regard for the health and safety of those who use them.

THROUGH the elementary schools, every child—in this formative period of his development—should have the advantage of a well-planned, well-conducted physical activity program. Teachers who understand the place of physical education in child development, and who are competent in guiding the learning, provide ample time and individualized instruction in skills and techniques of a variety of activities. These activities include modified athletic games, stunts, tumbling, creative rhythms, folk dancing, and simple games for large and small groups. Proper attitudes and understanding are sought and may be increased by encouraging children to assist in planning and carrying out the program. Instruction is supplemented by other physical education opportunities during recess, supervised play, intramural sports, and other curricular activities.

NO boy or girl in Junior and Senior High School should be deprived of the physical and social development to which physical education contributed so much. Every high school student has

*Platform for Physical Education. Joint platform of the American Association for Health, Physical Education and Recreation and the Society of State Directors. Revised April 1949.

a right to a daily period of *instruction* in such activities as team sports, individual and partner sports (like tennis, badminton, handball, golf), stunts, folk, square, social and creative dancing, swimming, and many more, or, if he is handicapped, modified activities that bring him as much of the full program as his condition permits.

Length of periods, credit, methods of grading, and other qualities should be comparable to those of other phases of the curriculum. Maximum values in the time devoted to physical education are achieved when there is selected grade placement of activities and groupings for efficiency in learning. There should be, also, adaptation of instruction to activity needs and interests at various age levels, and student participation in planning and carrying out the program. Furthermore, encouragement should be given to participation in intramural, recreational, and athletic activities as outlined in subsequent paragraphs.

EFFECTIVENESS and efficiency of college students should be developed and maintained through a coordinated campus-wide program which includes physical education experiences for all students. The college or university has a two-fold responsibility. The first is for providing a full program of physical activity to help each student achieve and maintain a high level of personal and social competence. The second is for educating teachers and other leaders in physical education who will be capable of advancing the high standards of the profession.

SUPPLEMENTING instruction in physical activity, there should be ample opportunities for all boys and girls to participate in intramural and other recreational activities. The total needs for activity cannot be met feasibly in the instructional periods alone. Neither can all other values be realized. Elementary and secondary schools, and colleges should provide opportunities for every student voluntarily to participate in wholesome intramural activities on a level of competition appropriate to ability, size, and degree of

maturity. Schools and colleges should also provide for participation in sports and other activities, through clubs and similar means, on a basis other than that of organized competition.

SO that all the educational values of interscholastic athletics may be secured from youth, athletics should be administered and conducted by school officials and teachers who are primarily concerned about the welfare of the participants. As an outgrowth of a good program of instruction for all and intramurals for many, interschool competition may offer valuable educative experiences for the well-skilled. Full regard must be given to the factors of age, sex, size, degree of maturity, condition of health, skill, ability, social and psychological development, and personal and professional competency of the leaders.

UNITED through professional associations on national, district, state and local levels, leadership in physical education should represent the finest in professional preparation, personal integrity, and social consciousness. Because of the tremendous possibilities for good that are latent in physical education and because the nature and appeal of the activities magnify the influence of the leader, especially when dealing with impressionable youth, those who presume to educate through physical activities should be equal to their trust.

The staff selected to conduct the program of physical education should meet the standards of certification and professional preparation of other members of a school teaching staff. There should be adequate, defined certification standards set by the respective state departments of education for teachers, supervisors, and administrators of physical education.

If the accepted pattern of organization of the elementary school delegates the responsibility for physical education to the classroom teacher, basic training in this field should be adequately incorporated in elementary teacher preparation. Both consultative and

supervisory services should be available to classroom teachers through persons fully qualified in physical education who are employed within the school system.

"STATES and local communities, assisted where necessary by the federal government, should provide sufficient support for a quality program of physical education. Physical education is an integral part of the total educational process. Within a good educational program physical education should be established with resources adequate to achieve its full purpose. Budgets of Boards of Education need to include such *educational necessities* as play areas, gymnasiums, sports equipment and supplies, shower, locker and towel facilities, and, not the least,

salaries of supervisory and teaching personnel adequate in number.

"AMERICA must remain strong: all those who live beneath her flag—all agencies concerned with the health, physical and social well-being of her people—must work together for national security and international goodwill through citizens who possess total *fitness*. National Security and International goodwill can be achieved by citizens who "live most and serve best." The role of physical education in their development is not insignificant. The principles outlined in this Platform, integrated with those of the Platforms of Health Education and Recreation, if applied, will contribute much to the development of total FITNESS of the people of the U. S. A."

NOTES & COMMENT

By ACTING EDITOR

HEALTH DEPARTMENT REPORTS

—It is always pleasing when we see reports by local health departments of their activities. Since local communities put up most of the money which is needed to operate a local health department, the local tax-payer is entitled to know what he is getting for his money. Within the past several weeks we have received two reports from local health departments—a report from the Asheville City Health Department comprises 13 mimeographed pages, depicting the organization plan, the names of the individuals directly responsible for the health activities in the city of Asheville and statistical and written reports of its various activities.

The Alamance County Health Department report is attractively printed with a map of Alamance County on the front cover. It is well illustrated and gives a good statistical account of the activities of the department, listing the personnel of the Board of Health, as well as the staff, and includes a financial statement of the budget and source of funds. Citizens of the City of Asheville and of Alamance County should

be convinced by these reports that part of their tax dollar which goes into their public health program is a profitable investment.

* * *

HOME NURSING—The American Red Cross has recently published the sixth revision of its Textbook on Home Nursing. It is published by The Blakiston Company of Philadelphia. The price is \$2.00. There are 227 pages and a comprehensive index of six pages. The following are chapter headings:

1. Causes and Symptoms of Illness
 2. Illness and How to Meet It
 3. The Patient in Bed
 4. Food and Nutrition
 5. Nursing Care in Special Conditions
 6. Home Emergencies
 7. Personal and Family Health
 8. Community Health
 9. Home Nursing Procedures
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"Nearly ever family has an illness or injury some time; much of the worry and confusion that often results can be

reduced if some member of the family has the knowledge and skill required to give simple home nursing care to the sick or injured.

Increasingly, doctors are recommending home rather than hospital care for many patients if conditions are favorable. This is especially true when constant attendance by an expert or the use of specialized equipment are not needed. Individual, personalized, loving service in a familiar environment—the home—plays an important role in the recovery of the patient."

MINERAL DEFICIENCIES MOST COMMON IN WOMEN AND CHILDREN, DOCTOR SAYS

Women and children are the most likely victims of several important mineral deficiency conditions, according to Dr. John B. Youmans of the School of Medicine of Vanderbilt University, Nashville, Tenn.

Severe iron deficiency anemia cannot be cured by diet alone, Dr. Youmans points out in a report to the American Medical Association's Council on Foods and Nutrition which appears in the *Journal of the A.M.A.*

Treatment with medicinal preparations of iron prescribed by a physician hastens recovery from such anemia, Dr. Youmans says.

Special consideration should be given to the occurrence of calcium deficiency in children, particularly older children and adolescents, Dr. Youmans continues.

"Growth poses additional demands and constitutes a 'stress' which may result in a calcium deficiency," he says. "Infants and children, who are likely to consume considerable amounts of milk, are less likely to suffer calcium deficiency than somewhat older children. The latter and adolescents as a group are less likely to receive milk in protective amounts and may be somewhat more in danger of a deficiency of calcium.

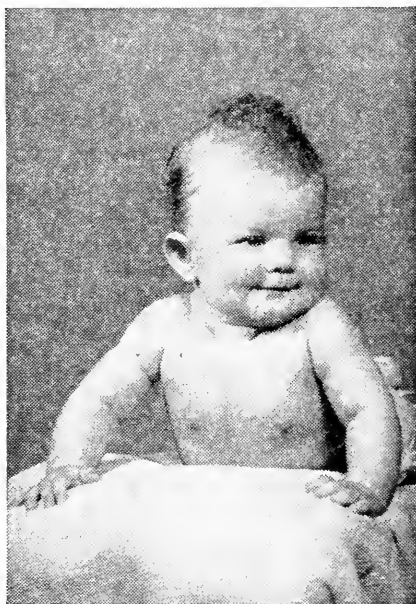
"Signs and symptoms of early or mild calcium deficiency are ill defined. An

aching pain in the extremities, more noticeable at night, seems to be one of the more common signs."

Goiter and underfunctioning of the thyroid gland result from lack of iodine, Dr. Youmans says.

"The incidence of iodine deficiency and simple goiter varies with the iodine content of the soil and water," he points out. "In this country there are goitrous areas, including the Northwest states, the Great Lakes region and Colorado. Prevention of iodine deficiency and the resultant goiter is relatively easy and highly successful. Treatment of the goiter is not.

"Hence prevention is important. Mass prevention is best accomplished by the use of iodized salt. Use of iodized salt for all children is desirable. Where it is not used the physician should keep close watch of the children under his care."



Claire Louise Lanier, 6 months old daughter of Mr. & Mrs. Earl U. Lanier, West Palm Beach, Florida. Mrs. Lanier is the former Byrdie Rae Midgett, Manteo, North Carolina.



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Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

OCTOBER, 1950

No. 10



SCENE AT HARKERS ISLAND, NORTH CAROLINA

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THE Health Bulletin



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

*PUBLIC HEALTH AT THE MID CENTURY

By S. B. MCPHEETERS, M.D., Director, District Health Department
Goldsboro, North Carolina

Introduction: Custom prescribes that presidents of states, societies and organizations of various sorts make at certain set times a so called address. The somewhat uncertain status of this custom is evidenced by the deprecating tone which commonly marks the introduction of such discourses. Usually, however, if the speaker takes no large toll of time nor heavy tax of thought, he is apt to emerge unscathed. I can only hope that no disastrous consequences will attend the present effort.

In this mid-century meeting it may be well for us health workers to take note of whence we came, where we are, and whither we are going, as there are doubtless those engaged in public health who know little of its origin, compass, and trend. Diverse definitions of health and public health perplex us. "Here it may be said that the general trend is to consider that a health problem becomes a public health one when because of its nature or extent it may be solved only by systematized social action." (Gov't in P. H. P. 8)

"In ancient Greece, 500 years B. C., city government engaged doctors to attend to public health and to give medical care to the poor. Some of those

doctors received two talents annually. The present day equivalent of that sum would be much more than \$1200.00. No N. C. health jurisdiction has quite equalled ancient Greece." (The life of Greece P. 346) Now if this discussion is to be at all illuminating it must have some characteristic of light. Doubtless speed of movement is that characteristic of light which would give greatest lustre to this discourse. So we will make a nonstop flight through the centuries until we pause to observe conditions in London a little more than a hundred years ago as reported by John Simon, the first Health Officer of London. In his annual report he wrote: "Last and not least among the influences prejudicial to health in the City of London as elsewhere, must be reckoned the social conditions of the lower classes. It is too true that among these classes there are swarms of men and women who have yet to learn that human beings should dwell differently from cattle. Men and Women, boys and girls in scores of each using jointly one common privy; grown persons of both sexes sleeping in common with their married parents; a woman suffering travail in the midst of the males and females of the several families of fellow-lodgers in a single room; an adult son sharing his mother's bed during her confinement. Such are instances recently within my knowledge." (A.J.P.H. Jan. '48 Part II)

*Presidential Address Presented before the North Carolina Public Health Association, September 7, 1950 at Winston-Salem, N. C.

I have taken this quotation from Dr. C. E. A. Winslow's paper on Poverty and Disease. "In one ward of New York City, doctors and inspectors report 'Domestic garbage and filth of every kind is thrown into the streets accumulating in winter to the depth sometimes of two and three feet.'" (Am. Med. & the Peoples Health) In February 1798, Mr. Livingston, the Representative of New York State, reported in the House of Representatives of the United States a bill "for the relief of sick and disabled seamen." It appears that seamen of that time were in somewhat the plight of the migratory workers of today. But then they were not admitted to local facilities for medical care of the poor. The marine hospitals, which Mr. Livingston's bill provided for these seamen, gave rise to the Marine Hospital Service which in time became the U.S.P.H.A.

Again we move to another area of history. Recurring epidemics of yellow fever led most communities, early in the nineteenth century or sooner, to a belief that most outbreaks were caused in some way by ships from foreign shores. This belief was shared by the majority of physicians and measures designed to be preventive in nature were introduced at various ports. Thus began the practice of quarantine. Earliest action was by the governments of the colonies. Petersburg, Virginia in 1780 was the first locality to establish a board of health. New York had one of some sort in 1796, Baltimore in 1798, the Town of Boston in 1799." (Gov't in P.H. P. 117) (P. 119) The nineteenth century was a period of sweeping and devastating epidemics. Polio epidemics of today give an entirely inadequate idea of the dread and panic which epidemics have caused and no idea at all of their deadliness. In 1832 cholera entered the Country and even 1872, the year in which the A.P.H.A. was organized, cholera was epidemic in 200 places in the Mississippi Valley. Epidemics of typhus, European typhus, which Dr. Zinser thinks changed the course of history, accompanied the influx of immigrants from Europe. Epidemics of yellow fever occurred frequently in the Atlantic and Gulf cities.

Epidemics of typhoid fever, dysentery, diphtheria, smallpox, malaria, swept the country with devastating effect.

It is almost impossible for us under the conditions of life today to conceive the terrors, torments, and disasters which beset and ravaged life in former centuries. The bubonic plague of the fourteenth century is said to have destroyed one quarter of the population of the earth, 60,000,000 human beings. Try to imagine yourself and your family in the midst of an epidemic of cholera or yellow fever, or plague. Neither you nor anyone around has any idea of the cause of the disease, no knowledge of any means of prevention unless indeed flight from the presence of the disease may effect an escape. Once taken with the disease no remedy exists to modify its course. People by the scores, hundreds, even thousands, are dying all around you. Who will be struck down next? A quotation from a plea by Stephen Smith, first president of the A. P. H. A., made at the meeting of the Association may give some idea of the state of things at the end of the third quarter of the last century. He says, "Of the children born, what vast percentages never see the anniversary of their birth? What other large percentage dies within five years? How few comparatively reach the age of ten? At twenty the generation has dwindled to an insignificant minority and at thirty three to forty five it disappears altogether." (A.M. Jr. P.H. No. 1947 Editorial Dr. Winslow)

It is to be remembered that the germ theory of fermentation and the microbic origin of communicable disease was established by Pasteur between 1857 and 1865. The tubercle bacilli was discovered by Koch in 1882. It took some time however for these epochal discoveries by Pasteur and others to be accepted and given practical application. Prior to this however the belief that filth caused disease gave rise to a somewhat widespread sanitation movement, which Dr. Harry S. Mustard describes as "general rather than specific, aesthetic rather than scientific." (Gov't in P.H. P. 120) "There was a tendency to judge

the danger of a situation in terms of unsightliness and smells, an inclination manifested even today." Sanitation as we know it, as much as communicable disease control, owes its existence to Pasteur and the dawn of the New Day in science.

With the organization of the American Public Health Association in July 1872 the modern era in Public Health may be said to have begun. Dire poverty, the plight of special classes, sweeping epidemics of deadly disease, appalling widespread insanitation, never before in human history effectively combated, now became the object of attack by organized forces steadily expanding, armed with new weapons provided by science in an unending succession and supported by an increasing prosperity brought about by the machine, the growth of knowledge in many fields and the boundless energy of our people, together with our vast natural resources.

Early in the present century a sufficient scientific basis for control measures had been established and with the rapid advances in bacteriology, immunology and sanitary science and practice, steady progress in the conquest of disease was made. Certainly the speaker himself has been greatly impressed as he viewed even a partial list of communicable or preventable diseases in which the cause and means of prevention has been found and in many the cure within the lifetime of the A. P. H. A. If the mention of their names brought a fraction of the terror which the thought of them once did this recital would cause profound feeling in this audience. Here is an incomplete roll call: Bubonic plague, tuberculosis, cholera, malaria (still a leading cause of death outside of N. America and Europe), syphilis, (pandemic in the 16th century and one of the scourges of the middle ages), gonorrhea which once brought blindness to countless thousands of infants, typhus, yellow fever, smallpox, typhoid, dysentery, pneumonia, diphtheria, scarlet fever, cerebro-spinal fever, whooping cough, measles, meningitis, rabies, rickettsial diseases, puerperal septicemia, streptococcal infection, trench

fever, undulant fever, tularemia, and so on. Leaving the infectious diseases we may mention pellagra, beriberi (a great scourge in the Orient), pernicious anemia, scurvy, rickets, diabetes. No effort at completeness has been attempted. Seventy-five years ago nothing was known as to the cause or means of prevention or cure of any of these diseases except that vaccination for smallpox was practiced in a limited way and some measures preventive of scurvy were employed.

Note must be made of the stupendous transformation effected by the sanitation of city water supplies, sewage, garbage disposal, by house screening, and insect control. Rural areas are steadily sharing these protections.

In 1872 there were four state health departments. Today every state and more than two thirds of the people in the United States have health departments. But 40,000,000 of our people in 43 states living in 1697 counties are still without local health departments. (Am. J. P.H. Nov. '48 P. 166)

From early days the practice has been followed of assigning public health activities to various governmental agencies at the national, state, and local level. "Mountin and Flook in their recent study of public health activities carried on by states, collected information on 35 separate categories within and without state health departments. These were as follows: Vital statistics, acute communicable disease control, tuberculosis control (prevention and treatment, including hospitalization), maternity hygiene, venereal disease control, infant and pre-school hygiene, school health services, industrial hygiene, workingmen's compensation, sanitation of water supplies and sewage disposal facilities, housing control, plumbing control, smokes, fumes and odors control, rodent control, garbage collection and disposal, shell fish sanitation, milk sanitation, malaria control, pest mosquito control, supervision of hotels, restaurants, tourist camps and other facilities for the traveling public, food and drug control, mental hygiene (prevention and treatment, including

hospitalization), care of crippled children, cancer control, prevention and care of blindness, vocational rehabilitation, pneumonia control, hookworm control, health services for migratory labor, general medical care of the needy, dental services, laboratory service, health education, research activities, licensure of professions and agencies significant in relation to public health." (Gov. in Pub. H. P. 95) That this list is incomplete will be evident upon slight reflection.

The list of diseases over which we have gained control, the great increase and coverage of health departments, the variety and number of health activities, may give the mistaken impression that we have neared the achievement of our task and only a clean up job is ahead of us in the near future. Let us consider some of the features of the present situation.

"Chronic illness affects nearly every family. It has been conservatively estimated that about 25 million persons, more than a sixth of the population have a chronic disease. Some seven million of these have an appreciable disability from this illness, while 1½ millions are invalids. The most important of the chronic diseases are: heart disease, arteriosclerosis, high blood pressure, nervous and mental disease ("It is estimated that eight million persons, about 6% of the population of the United States are suffering from some form of mental disease or personality disorders, *Am. Jr. P. H.*, June 1948, P. 87), Arthritis, kidney disease, tuberculosis, cancer, diabetes, and asthma." (*Am. J. P.H.* Oct. '47 P. 1256). "Each year chronic diseases cause nearly a million deaths and are responsible for the loss of almost a billion days from productive activity." "Although the prevalence of chronic disease increases with age, and the progressive aging of our population is one of the factors responsible for the growing importance of the problem, it must be borne in mind that chronic illness occurs at all ages. Fully one half of the chronically ill are below the age of 45 and 16% of them are under 25. More than three quarters are persons in the productive

years from 15 to 64. Chronic illnesses in childhood and adolescence are particularly important because they influence the period of growth as well as the entire period of adult life." "The basic approach to chronic disease must be preventive." "The periodic medical examination of apparently well persons needs to be explored on a new basis including selective laboratory and clinical examinations chosen for particular age, sex, geographical and occupational groups. These include serology, chest x-rays, urinalysis, electrocardiography, ophthalmoscopic and other examinations." "Further advances in the prevention as well as the treatment of many chronic diseases are dependent on research." I have been quoting from the Joint Statement of Recommendations by the American Hospital Association, the American Medical Association, the American Public Health Association, and the American Welfare Association.

The problem of the increase in number, importance and mortality of accidents is impressed on us by every morning paper.

As we noted earlier in this discussion poverty was an important factor in the rise of the public health movement. Mr. Robert L. Heilbroner, a Harvard trained economist, writes in the June Harper's Magazine: "In 1948, a hundred and forty odd million Americans pulled down the staggering total personal income of \$212,000,000,000.00. But at the same time that our aggregate national income was making us the economic wonder of the age, these facts about national state of well being were also true and somewhat less assuring. One out of every two single dwelling individuals lived on less than \$1,000.00 a year. One family out of ten got along, to the extent that a family could get along, on \$20.00 a week or less. Out of forty million families in the nation, ten million shared in the greatest boom in history with an income of less than \$40.00 a week, just over \$13.00 per person. There are over 1,700,000 farm families with incomes under \$1,000.00, a quarter of them with five or more mem-

bers to feed. Counting only rural Americans with less than \$1,000.00 income, there are well over six million farming poor. This startling mass of poverty living in the midst of plenty has an important bearing upon health."

A few salient facts which have a determinative influence on the future course of public health may be cited. There is a considerable remaining communicable disease problem. There is an enormous chronic disease problem. The need and demand for sanitation service is steadily growing. The health of the school child is receiving increasing attention and provision. There are 30 million American poor and an equal number in lower income brackets. The trend toward social legislation persists. The national income remains at a high level with no signs of recession. Scientific advances are steadily and rapidly

being made. The cost of medical care is high and mounting. There is a scarcity of professional personnel.

Dr. Harry S. Mustard, in his presidential address at the 1947 meeting of the A. P. H. A. said: "The four most powerful influences that have shaped public health affairs in the past and will continue to shape them in the future are, advances in scientific knowledge, the direction taken by social and economic evolution, the standards of living of the population, and the quality and availability of medical care and of professional public health workers."

I make no attempt to forecast the course and effect of international events. Dr. Mustard's analysis of determinative forces seems to me to be just. I leave it to you to apply that analysis to the facts here presented for your consideration.

***SOME LOCAL QUESTIONS INVOLVED IN DRAFTING HEALTH REGULATIONS FOR ADOPTION BY COUNTY BOARDS OF HEALTH IN NORTH CAROLINA**

By E. H. ELLINWOOD, M.D., Health Director, Guilford County Health Department, Greensboro, and

MR. WILLIAM M. COCHRANE, Assistant Director, Institute of Government, Chapel Hill, North Carolina

The county board of health in North Carolina has long been endowed with more sweeping local legislative power than any other county agency. Indeed, the county board of health today is the only county agency to which the General Assembly has delegated any considerable authority to make rules and regulations in exercise of the state's police power.

Since 1901 the statutory grant of power to county boards of health has been in these words, now found in G.S. 130-19: "The county board of health shall have the immediate care and responsibility of the health interests of their county . . . They shall make such

rules and regulations, pay such fees and salary, and impose such penalties as in their judgment may be necessary to protect and advance the public health."

This is a very broad grant of power, and in cases attacking particular health regulations the courts have shown great respect for the judgment of health boards as to what "may be necessary to protect and advance the public health." But there are limitations on the legislative power of such boards and on the ways in which it may be exercised, and it is important that they be borne in mind by anyone setting out to draft a regulation for adoption by a county board of health. During the summer just past the Institute of Government has been working with the Guilford County Health officer and his staff, at the request of the Guilford County Board of Health, in drafting a set of health re-

*Presented before the Health Officer's Section of the North Carolina Public Health Association at Winston-Salem, on September 8, 1950.

gulations for Guilford County. It is the purpose of this paper to outline briefly some of the limitations on the power of the county board of health, as they were illustrated by legal questions considered during the Guilford project. It should be noted here that substantially the same principles which apply to regulations of county boards of health in North Carolina apply also to regulations of district boards of health.

It may be helpful first to list some of the principle grounds on which health regulations may be attacked in the courts. A health regulation may be declared void if it is found to be:

1. In conflict with the national or state constitutions—as, for example, when a health regulation would deprive a person of his life, liberty, or property without due process of law;

2. In conflict with the state laws or the regulations of the state board of health—as, for example, when a county health regulation would set a lower standard than the minimum prescribed by statute or by regulation of the state board;

3. *Ultra vires*—exceeding the statutory power granted by the General Assembly—as, for example, when a county health regulation would include regulations aimed not at protecting the public health, but at protecting the public safety, morals, or general welfare;

4. Discriminatory—as, for example, when a county milk regulation would require all new dairies to meet a sanitary construction standard not required of old dairies already in operation when the regulation was adopted;

5. Unreasonable—as, for example, when a county health regulation would require a standard of septic tank construction so expensive as to be prohibitive and which as a matter of scientific fact bears no substantial relationship to the protection of the public health;

6. Arbitrary—as, for example, when a county health regulation would authorize one of its agents, such as a sanitary inspector, at his discretion or whim, to revoke the permit of a trailer park operator without providing in the re-

gulation any set of standards carefully defining the conditions under which the permit should be revoked in order to protect the public health;

7. Uncertain, ambiguous, or vague—as, for example, when a county health regulation is so poor drawn that its meaning cannot be determined, or when it contains contradictory provisions so that it is impossible to determine the true intent of the board of health.

It is obvious that the requirements that health regulations must not be discriminatory, unreasonable, or arbitrary are actually fundamental constitutional requirements which must be met by every statute, ordinance, rule, or regulation affecting the lives, liberty, and property of the people.

Against the background of these general principles, a number of interesting legal questions can be raised in connection with the power of county boards of health to make rules and regulations, and the way in which that power should be exercised. In the limited time remaining, however, it is possible to discuss in more detail only a few examples in addition to those already briefly referred to.

Public Safety

Suppose a county board of health is considering a proposed regulation to govern the sanitary construction and operation of swimming pools and other bathing places. It clearly has the right, under its general grant of power contained in G.S. 130-19, to include, for example, a provision setting standards for sanitary construction aimed at preventing contaminated surface waters from draining from the side areas into the pool—because the statute authorizes the board to make regulations aimed at protecting the public health, and such a construction requirement can be justified in the interests of the public health. But could the board properly include a provision requiring, for example, that “all walkways shall be of non-slip construction,” or requiring that “a life-guard shall be on duty at all times when the pool is in operation?” Such provisions would obviously be aimed at protecting the public safety rather than

the public health. Our Supreme Court has not passed on the question, but in the light of cases from other jurisdictions, it is doubtful whether such safety provisions would be upheld, since the statute does not empower the board to make regulations for the protection of the public safety.

It is of course important today that the word "health" be given a realistic definition in keeping with the modern trend in the field of public health, which has infinitely expanded the concept of "health responsibility" beyond the mere control of epidemics of contagious diseases. For example, it would be an extremely narrow definition of "health" if, today, the prevention and control of the effects of atomic radioactivity were excluded from the health department's province. And the line between "public health" and "public safety" is frequently a difficult one to draw. But it must be borne in mind that the courts have the duty of construing regulatory ordinances in the strictest accord with the actual grant of legislative authority to enact them, and the simple fact is that the legislature has not given county boards of health authority to regulate in the interest of anything but the public health.

It must be noted that this legal situation poses a very real problem for the county board of health and for the county as a whole. If it be held, for instance, that a county board of health has power to regulate all the health aspects of swimming pool operation, but has no authority to include provisions aimed solely at protecting the safety of the public, what agency then has the power to fill this obvious gap in the protection accorded the swimming public? Of course, within incorporated cities and towns, there is no similar problem, because the city governing boards have full police power to protect the health, safety, morals, and welfare of the public. But as to the remainder of the county's area, only the General Assembly today has the power to legislate in the interest of the public safety, morals, or welfare, with the power to regulate in the interest of health having

been delegated by the legislature to the board of health. The county commissioners do not have regulatory powers in these fields.

Public Morals

Similarly, the statute does not empower the board to make regulations for the protection of the public morals. Yet frequently county health regulations are found to contain such provisions as this one from a swimming pool regulation: "Dressing rooms for each of the two sexes shall be located in separate rooms with separate entrances." Such provisions could not be sustained, of course, unless the courts found that they do in fact have a substantial relation to the public health, as well as to the public morals.

Meat Regulation

Suppose the county board of health is considering a proposed regulation to govern the slaughter and sale of meat and meat products in the county. Does the county board of health have power to adopt such a regulation? It is probable that it does, under its general power to make rules and regulations to protect the public health. But the subject of meat offers a good example of confusion, or at least duplication, in many of our statutes relating to health. A number of agencies, at both the state and local levels, can point to statutory authority to participate in meat regulation and inspection. The state board of agriculture had authority to adopt rules and regulations governing the wholesomeness and soundness of meat as food—and the state board of health has authority to adopt rules and regulations governing the sanitation of abattoirs and meat markets and other establishments where meat is handled. Both these agencies have rules and regulations covering their portions of the authority over meat. The statutes give city governing bodies authority to regulate both the wholesomeness of meat and the sanitation of meat handling establishments within their corporate limits, and give county commissioners the authority to regulate the meat in the areas outside incorporated towns. And, as we have noted, the county board of health also

seems to have full authority, under its general powers to protect the public health, to adopt and enforce regulations governing both the wholesomeness of meat and its sanitary handling.

Incorporation by Reference

Suppose the county board of health, in considering a proposed swimming pool regulation, decides to follow the standards recommended in the well-known report to the American Public Health Association entitled "Recommended Practice for Design, Equipment and Operation of Swimming Pools and other Bathing Places." Could the board properly include a provision requiring that "all public swimming pools and other bathing places shall conform with the standards set forth in the latest current edition" of the above-named report?

It is very doubtful whether such a provision would be valid, because it would be open to the objection of uncertainty, and, perhaps more important, because it would also be in effect an unauthorized delegation of the board's powers—that is, the board would in effect be delegating its regulation-making on this subject to the American Public Health Association committee responsible for the report, which committee could change the county's swimming

pool regulations simply by issuing a new edition of its report. If the board wanted to be guided by the report of the committee, it could simply take the committee's recommendations, draft them in the form of regulations, and adopt them. As a matter of good practice, it is always better to set out every provision in full, rather than to incorporate by reference some document outside the text of regulations. It is essential that the swimming pool operator, for example, have ready access to every restriction affecting his establishment, and he should not be required to keep up with the "latest current edition" of reports published far from his county in order to know the rules applying to him. In other words, he should be able to learn from the regulation itself every requirement which applies to his business.

It is proper, however, in a health board regulation, to incorporate by reference the provisions of some other legal regulation, ordinance, or statute, provided the latter is itself easily accessible to the public. For example, a county board of health meat regulation which cites and incorporates by reference the regulations of the state board of agriculture governing meat inspection would doubtless be valid.

HOME DEMONSTRATION GROUPS' PUBLIC HEALTH PROGRAM

BY WILLIAM H. RICHARDSON, State Board of Health
Raleigh, North Carolina

This article is dedicated to the 43,432 members of North Carolina's 1,731 Home Demonstration Clubs, because of their invaluable contributions to the cause of Public Health during 1950.

Early this year, Miss Verna Stanton, Assistant State Home Demonstration Agent and Advisor to the North Carolina Federation of Home Demonstration Clubs, conferred with Dr. J. W. R. Norton, State Health Officer, about some of the things which Home Demonstration Clubwomen could do to improve health

conditions among our rural people. When the 1950 program was set up, the State Federation, through its State Health Chairman, Mrs. Walter Pike, of Hendersonville, asked all counties to include the following in their work for the year:

1. Continue cooperation with other agencies in an educational program, working toward the ultimate eradication of cancer, tuberculosis, and heart disease, in cooperation with **all health de-**

partments and clinics, throughout the State.

2. Immunization, against typhoid and diphtheria, of children under one year of age.

3. A thorough physical examination of all Home Demonstration Clubwomen.

With these objectives in view, Mrs. Pike and her committee launched a 1950 health program worthy of comparison with any humanitarian effort being carried on in North Carolina. Furthermore, this health offensive has provided an outstanding example of what **co-operation** can accomplish. More and more, we are becoming conscious of the fact that, through cooperation, departments of government with the same ultimate goals can eliminate much duplication of effort and, thereby, hasten the winning of objectives.

Recently, Miss Stanton submitted to the State Health Officer a report of the State Health Committee of the North Carolina Federation of Home Demonstration Clubs, which was prepared by the Chairman, Mrs. Pike. The Committee presented reports from eighty-three of North Carolina's one hundred counties. The number of clubs participating was 1,480.

The report goes on to show that 1,883 clubwomen from fifty-one counties attended cancer clinics. Not only that, but cash contributions amounting to \$31,110 were made for the various causes to which the women gave their support. We are aware of the fact that statistics may be, and often are, boring; but this case, we think, furnishes an exception to the rule, due to the magnitude of the program carried out by these patriotic women.

Health Causes Supported

Mrs. Pike reports that contributions amounting to \$9,140 were made in sixty-five counties, to combat cancer. In twenty-five counties, contributions to aid in the study of heart disease amounted to \$879, while sixty-four counties contributed \$10,523 to aid polio victims. From thirty-five counties, the sum of \$1,521 was contributed for the aid of crippled children, while forty-one counties reported that the sale of Christmas

seals netted \$7,278. Red Cross contributions in six counties totalled \$1,769.

Mrs. Pike's report shows that the Home Demonstration Clubwomen not only made and secured cash contributions for the various health objectives named, but gave their time, as well as their money and their influence. For example, 1,713 clubwomen assisted in pre-school clinics, in which 12,207 children were examined. The report showed further that, through the efforts of club members, 10,704 children were immunized against typhoid fever and diphtheria. Blood banks were reported in twenty-eight counties, where 1,428 clubwomen assisted in securing donors. In the field of good nutrition for the underprivileged, 12,516 clubwomen actively supported and, in some instances, assisted in 707 school lunch rooms, where 160,000 free lunches were furnished.

In addition to all this, 5,504 clubwomen, themselves, underwent thorough physical examinations.

In submitting her report, Mrs. Pike made some timely observations on the special health activities being engaged in by the North Carolina Federation of Home Demonstration Clubs.

Some Observations

It seemed to her, she said, that more emphasis is being placed on training health leaders among clubwomen, and that these leaders are becoming more active all the time. One of the most significant facts about the health program of the Federation of Home Demonstration Clubs is the close cooperation maintained between health workers in these clubs and the local health departments. Here we find another demonstration of the value of placing emphasis on local health work. After all, the **local health department** is the agency that does the work of actually making available the benefits of Public Health. These benefits are not provided at the State Health Department in Raleigh, which simply is an administrative and advisory agency, but out in the field—in your county, wherever you live.

And so it is with home demonstration clubs. They, too, are located throughout the State, and their work is largely

local. It has to be that way. While headquarters are maintained at State College, in Raleigh, the actual work of the clubs is carried on at the "grass roots."

All of this goes to show that, narrowed down, any movement designed to bring about better health, or better economic conditions, must be **carried to the people**. It is so even in religion. Those denominations which have been militant in spreading their gospel, have shown the greatest results.

Taking Health to People

The expansion of the Public Health movement, in general, is being characterized by making all the facilities of Public Health available in each **community** in North Carolina. The benefits of Public Health now are available in each of our one hundred counties.

It has been pointed out by home demonstration leaders that the interest of their clubwomen in Public Health is nothing new, but that it is gaining momentum. Home demonstration members now serve on health committees of community councils. Tuberculosis X-ray clinics are high on their list of county projects and clubwomen are assisting in the organization of blood banks. They are also placing emphasis upon, and giving support to, pre-natal, well baby, tonsil and eye clinics, as well as school dental clinics. They are emphasizing the value of proper garbage disposal, sanitation in the home, DDT spraying, and programs for the elimination of rats.

All these objectives are designed to promote Public Health, by means of the general principle of preventive medicine. These clubwomen are home women. The very name of their organization denotes this fact—the North Carolina Federation of Home Demonstration Clubs. Being homemakers, themselves, they are in a position to know just what is needed **in the home** to promote good health. Many of them being mothers and some of them being students, they are familiar with school health needs. Hence, their interest in school lunch rooms, and in furnishing soap dispensers for school rest rooms, in the interest of sanitation, which, of course, is one of the pillars of Public Health.

During the execution of the 1950 program, the Home Demonstration Clubwomen have assisted in sewing for hospitals, in providing magazines for our Tuberculosis Sanatoria, and in furnishing a rest room at a hospital. One club bought a wheel chair for a handicapped woman and the council in the same county owns a hospital bed and a wheel chair for those who need them. The clubwomen also are making greater use of the services of our State Health Department, by showing films and by inviting health officers and nurses to address them.

Concluding her observations, Mrs. Pike said: "These are but a few of the many, many things reported this year. Home Demonstration Women of North Carolina definitely are on the march to better health for themselves and for others."

MEDICAL SCHOOLS SET ENROLMENT RECORD; MORE DOCTORS GRADUATED

The outlook for graduation of more doctors to safeguard the health of the American people is better than it has ever been.

This is brought out in the annual report of the American Medical Association's Council on Medical Education and Hospitals, published in the Journal of the association.

All records for enrolment in approved medical schools in the United States were broken in the past year, Dr. Donald G. Anderson, secretary of the council, and his assistant, Mrs. Anne Tipner, both of Chicago, said.

The total enrolment in the 72 medical and seven basic science schools for the academic year 1949-1950 was 25,103. This

represents an increase of 1,433 students, or 6 per cent, over the preceding year. The latest total is double the enrolment in 1910 (12,530), about 18 per cent higher than 10 years ago, and even larger during the years of World War II, when extra classes were enrolled in all medical schools on an accelerated program.

From July 1, 1949, to June 30, 1950, 5,553 physicians were graduated from approved medical schools in the U. S., an increase of 459 over the preceding year. This is the largest number graduating from approved medical schools in the nation in one year except for the years 1946 and 1947, when several schools at the conclusion of their war-time program graduated more than one class during a 12 months' period.

On the basis of enrolments in the senior class for 1950-1951, the medical schools of the U. S. have estimated that they will have slightly more than 6,000 graduates during the coming year.

The freshman class for the first time exceeded 7,000 students during 1949-1950. The actual number, 7,042, represented an increase of 354, or 5.3 per cent, over the preceding year and an increase of 1,026, or 17 per cent, over the average size of the freshman class in the 10 years preceding World War II.

"The freshman class that will enter medical school this fall will be even larger," Dr. Anderson said. "On the basis of the record of the past year, the new schools that are being organized and the expansion of existing schools that is under way, it now seems likely that within the next few years the freshman class will number close to 7,500 students."

Schools with the largest number of graduates during 1949-1950 were the University of Illinois College of Medicine, Chicago, 161; Jefferson Medical College of Philadelphia, 152; the University of Tennessee College of Medicine, Memphis, 143; Harvard Medical School, Boston, 133; and Northwestern University Medical School, Chicago, 131.

The report said that the budgets of the medical schools and basic science schools for the 1950-1951 fiscal year total

about \$67,500,000, representing an increase of about 42 per cent in the last four years. It also said that figures of the cost of new construction, completed, started or authorized during the last year, were available for only one half of the projects reported and the total cost of these was more than \$100,000,000.

Women totaled 1,806, or 7.2 per cent, of the medical students in this country, compared to 2,109, or 8.9 per cent, in the preceding year. The percentage of veterans enrolled in the medical schools and schools of basic medical sciences in the U. S. during 1949-1950 was 65.9 per cent, which is almost identical with the figure 65.8 per cent for the preceding year.

Polls taken in 19 medical schools during the past year reveal that the percentage of students planning to enter general practice has increased from 36 to 47 per cent in the last three years. The number planning to specialize has decreased from 36 to 31 per cent. Other students polled in both periods still had to make a decision.

The problem of formulating a sound program for medical education in the event of another war has been under study by the Association of American Medical Colleges and the A.M.A. Council on Medical Education and Hospitals since the end of World War II, Dr. Anderson said. He added:

"Two days after the invasion of South Korea, the Executive Council of the Association of American Medical Colleges and the A.M.A. Council on Medical Education and Hospitals formed a joint committee on medical education in time of national emergency to represent both organizations in discussions with representatives of government agencies and other groups on all problems relating to medical education during the current crisis.

"This committee has been engaged since June in drafting for submission at an early date to the appropriate government agencies recommendations with respect to the conduct of medical education, including premedical and graduate medical education.

"It is too early to determine whether

drastic changes in premedical education, the organization of the medical curriculum and the training of interns and residents comparable to those put into force during World War II will be sought or whether attempts will be made to place physically qualified medical students on an active duty status in the armed forces.

"It does seem clear that without further delay medical schools will want to review their curriculums to determine how increased emphasis can appropriately be placed on such subjects as military medicine, public health and civilian emergency relief, including the prevention and treatment of casualties from atomic explosions. Planning for dispersal and evacuation of medical schools in the event of bombing of American cities is another topic to which the medical schools will undoubtedly address themselves in the months ahead."

—o—

ADVISE EXTREME CAUTION IN USE OF NEWER INSECTICIDES

Extreme caution in using newer insecticides containing the chemicals HETP, TEPP and parathion was advised today by a group of private and governmental physicians and research men who are members of or consultants to the American Medical Association's Committee on Pesticides.

These insecticides are used principally for controlling aphids, mites and other fruit and vegetable crop insects. They are not used for controlling insects attacking man or animals or for insects in households and storage rooms.

Recommendations concerning the preparations were made in a report which appears in the *Journal of the American Medical Association*.

Several deaths and moderate to severe poisonings have resulted from exposure to the chemicals in their production or use, Dr. Herbert K. Abrams of the California Department of Health, Berkeley, and Drs. Donald O. Hamblin and John F. Marchand, medical director and assistant medical director of the American Cyanamid Company, New York, said.

Authenticated cases of poisoning re-

ported total 198 to date, a comparatively large number of persons in relation to the short period in which the chemicals have been in use, the doctors added. This number is not believed to include all the accidents that have occurred.

Insecticides containing HETP, TEPP and parathion are sold under a large number of trade names, according to S. A. Rohwer, D. Sc., and H. L. Haller, Ph.D., assistant to the chief and assistant chief of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington, D. C.

HETP, TEPP and parathion may be absorbed through the skin, respiratory tract, eyes or gastrointestinal tract, Dr. David Grob of Johns Hopkins University and Hospital, Baltimore, said.

Although TEPP is the most potent of the three chemicals, the greater over-all danger to man and domestic animals is from parathion because of its greater stability in water and greater solubility in fatty mediums, including the outer layer of fruit and leaves, Dr. Grob pointed out.

He listed these safety measures to reduce exposure and minimize absorption of the insecticides:

1. Clean protective clothing is required. The type depends on the nature of the product and degree of exposure.
2. Workmen engaged in manufacture or packaging of the chemicals should be protected by adequate exhaust ventilation. Personnel applying aerosols of the chemicals, including pilots, should wear face masks. Wind dispersal should be avoided to unprotected personnel or domestic animals.
3. Personnel should remove protective clothing and wash hands, arms and face thoroughly with soap and water before eating, drinking or smoking. Insecticides containing parathion may persist for varying periods as residues on plant tissue. Precautions in reference to harvest and the like should be observed for safety of all concerned.
4. Inflammable insecticide containers should be burned and any area in which the insecticides are spilled should be decontaminated by cleaning and washing. Waste should be burned or buried.

5. A periodic blood test helps to prevent cumulative effects in exposed personnel by indicating those who should be removed from exposure.

Toxic effects of the three chemicals are similar and are referable to the nervous system, Dr. Grob said. The first symptoms to appear usually are loss of appetite and nausea, which are soon followed by vomiting, abdominal cramps and excessive sweating, he added.

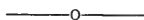
Kenneth DuBois, Ph.D., of the Toxicity Laboratory and Department of Pharmacology of the University of Chicago said that animal experimentation has shown that repeated exposure to parathion may result in subacute poisoning, but no evidence of cumulative toxic effect has been observed with HETP or TEPP. Parathion is highly toxic to all species of animals, he concluded.

Dr. A. J. Lehman, chief of the Division of Pharmacology, Food and Drug Administration, Washington, D. C., Albert Hartzell, Ph.D., head entomologist of the Boyce Thompson Institute for Plant Research, Yonkers, N. Y., and J. C. Ward, M.Sc., chief of the Pharmacology & Rodenticide Section, Insecticide Division, U. S. Department of Agriculture, Washington, D. C., advised that it is "quite unlikely that a parathion spray residue problem will become serious if spray schedules recommended by qualified entomologists are followed."

"The extreme toxicity of (these) insecticides suggests that they can be harmful to beneficial forms of life, including certain insects, fish and wild life," they continued. "Their use on livestock and pets is not recommended. With the exception of direct application to domestic animals, little hazard exists with HETP and TEPP.

"Parathion presents a greater hazard. In the case of apples and pears, for example, if parathion is applied strictly in accordance with the recommendations of the U. S. Department of Agriculture, normal weathering should result in residues not greater than a fraction of a part per million. Traces of this magnitude would not constitute a health problem. This is not necessarily true in the

case of citrus fruit. The evaluation of the health hazard from residues such as this is being made at a (Food and Drug Administration) hearing now in progress (in Washington, D. C.)"



OVEREATING ATTRIBUTED TO ENVIRONMENT AND EMOTIONS

The important cause of obesity is overeating, which may result from external factors, such as the sight of tempting foods, or from emotional disturbances.

This is brought out by Dr. Max Millman of Springfield, Mass., in an article in *Today's Health*, published by the American Medical Association.

(The glands and abnormalities of metabolism also can influence weight in some persons, according to other medical authorities.)

"The bad example set by gluttonous parents is damaging," says Dr. Millman, a specialist in internal medicine and visiting physician at Mercy Hospital and Springfield Health Department Hospital. "Children are more likely than not to follow suit.

"Another powerful environmental cause for overeating is found in our present day social amenities, calling as they do for dinner parties, banquets, cocktail parties and the like. And there is the powerful influence of exposed trays of candy, cookies and nuts in many living rooms, as well as the pastries and desserts displayed so enticingly in the windows of bakeries and restaurants.

"It has been stated aptly that many people overeat because of emotional starvation. They find food a handy gratification. Instead of drowning their sorrows in alcohol, they bury theirs in calories. Many people worry themselves into obesity. The mental angle is portrayed perhaps best of all in the person who, strange as it may seem, employs obesity as a defense mechanism. He clings to his fat because it relieves him from certain responsibilities, such as marriage, an unpleasant job or rough playing with the boys.

"To some people, food symbolizes

security. They overeat, therefore whenever they are troubled by a sense of insecurity. Boredom also may prove conducive to overeating. Sufferers from an inferiority complex may endeavor to bolster their importance with obesity.

"The hazards of obesity are no longer questioned. Life insurance statistics show conclusively that excessive weight not only predisposes its victims to a long list of serious conditions such as diabetes, heart disease and high blood pressure but shortens their life expectancy to a shocking degree. For people between the ages of 45 and 50, as little as 25 pounds of excess weight diminishes their life expectancy by fully 25 per cent."

HIGH STANDARD OF VETERAN CARE CREDITED TO MEDICAL LEADERSHIP

The excellent medical care which the government is providing for war veterans is largely the result of the Veterans Administration's constant adherence to the policy that the program remain under the direction and jurisdiction of medical personnel.

This opinion is expressed by a Special Advisory Group to the Veterans Administration in a report published in the *Journal of the American Medical Association*. The group, representing all divisions of medicine and surgery and allied activities, was established by Congress for the purpose of advising the veterans administrator with respect to policy. Dr. C. W. Mayo of Rochester, Minn., is chairman.

"As long as the Department of Medicine and Surgery of the VA remains under proper and authoritative medical control this type of superior medical care will always prevail for the veteran," the group reported.

"If the time should come, however, when such control is passed to lay, bureaucratic or political hands, that will

be the beginning of deterioration of the program of medical care for the veteran.

"Therefore, it is to the best interest of the American people, the medical profession and the veteran groups always to be on the alert to see that this great enterprise of medical care continues under the direction of highly qualified American physicians. As long as the veterans' organizations continue to insist, as they have in the past, that members of the medical profession conduct this program, it will continue to provide a high type of service."

The group considered the improved quality and the high type of medical service maintained since the end of World War II the more remarkable because the veteran load increased threefold.

"This remarkable achievement in mass medical care has never been duplicated here or in any other country," it pointed out. "There seems little doubt that the veteran who is entitled to it by law does receive the finest type of medical care in a country where medical science has reached its highest development.

"For this the American medical profession may justly be proud. It could not have been done without the wholehearted cooperation and support of American medicine in general and of medical education in particular. The entire program of gearing the medical care of the veteran to the educational medical plants of the country and the employment as consultants of the finest medical brains in America have made the program possible."

The group disagreed with the recommendation of the Hoover Commission that all government hospitals be consolidated under a single agency, saying:

"If this should be done it seems unlikely that the veteran would receive any better medical care than at present and it is likely that the quality of medical service would ultimately deteriorate from its present high standards."



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The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

NOVEMBER, 1950

No. 11



**BUY
CHRISTMAS SEALS
FIGHT
TUBERCULOSIS**

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FREE HEALTH LITERATURE

The State Board of Health publishes monthly THE HEALTH BULLETIN, which will be sent free to any citizen requesting it. The Board also has available for distribution without charge special literature on the following subjects. Ask for any in which you may be interested.

Adenoids and Tonsils	Hookworm Disease	Typhoid Fever
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SPECIAL LITERATURE ON MATERNITY AND INFANCY

The following special literature on the subjects listed below will be sent free to any citizen of the State on request to the State Board of Health, Raleigh, N. C.

Prenatal Care.	First Four Months.
Prenatal Letters (series of nine monthly letters).	Five and Six Months.
The Expectant Mother.	Seven and Eight Months.
Infant Care.	Nine Months to One Year.
The Prevention of Infantile Diarrhea.	One to Two Years.
Breast Feeding.	Two to Six Years.
Table of Heights and Weights.	Instructions for North Carolina Midwives.
Baby's Daily Schedule.	Your Child From One to Six
	Your Child From Six to Twelve
	Guiding the Adolescent

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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

TUBERCULOSIS CONTROL IN NORTH CAROLINA WITH EMPHASIS ON CASE FINDING

BY WILLIAM A. SMITH, M.D.

State Board of Health, Raleigh, N. C.

1. General

The Tuberculosis Control Section, Division of Epidemiology, has been in operation since January 1, 1945. The equipment at the time active operations began consisted of one trailer with x-ray equipment. Additional equipment was acquired as funds became available, and at this time the Division owns:

- a. Eight mobile x-ray units with complete equipment.
- b. Eight International tractor trucks, type K-7.
- c. One GE 200 MA unit installed at Duke Hospital, Receiving Department, for the purpose of making chest x-rays of out-patients as well as others who desire them.
- d. One generator.
- e. One GMC Laboratory truck (one generator unit mounted on this vehicle).
- f. One Chevrolet Suburban carry-all.
- g. One Westinghouse portable x-ray apparatus.

The amount of equipment has therefore increased from one x-ray unit to eight units with the additional equipment noted above.

Activities have accordingly expanded. In 1945, only 18,242 persons were x-rayed, and in the succeeding years this number has markedly increased. The number of persons x-rayed since 1945

are noted as follows:

1946	209,992
1947	236,614
1948	220,822
1949	273,571
1950	202,611

(Including September 30, 1950)

The Section personnel consists of two doctors, one part time consultant nurse, two health educators, one chief clerk, one clerk on duty at the Central Sanatorium whose duties are concerned with follow-up activities, one chief technician, four other clerks, thirteen technicians, and one field clerical supervisor, or twenty-six persons.

There are two doctors, one chief clerk, and three other clerks at the Central Office in Raleigh. Two x-ray technicians have their headquarters at the central office and operate out of Raleigh carrying out independent surveys.

2. Tuberculosis Control Measures

Several services and agencies are concerned in Tuberculosis Control. The services include:

- a. Case finding
- b. Clinical services
- c. Nursing services
- d. Hospital services
- e. Health Education
- f. Laboratory services
- g. Rehabilitation
- h. Vital statistics
- i. Welfare

In the general organization of our State Government, there are four State agencies which perform these services. These are:

- a. The Department of Public Instruction
- b. The State Board of Public Welfare
- c. The Sanatoria Board
- d. The State Board of Health

The functions of the four agencies noted above are:

a. The Department of Public Instruction is responsible for training the tuberculosis patient after he is discharged from the hospital. This is done through the Division of Vocational Rehabilitation.

b. The State Board of Public Welfare protects the patient's family against economic distress by working through the county welfare agencies.

c. The Sanatoria Board controls the three state sanatoria which are located at Wilson, McCain, and Black Mountain.

d. The State Board of Health controls the:

1. Division of Local Health Administration
2. Division of Epidemiology
3. Laboratory of Hygiene,

all of which are closely concerned with tuberculosis control.

The Tuberculosis Section is a unit in the Division of Epidemiology, and the functions of this section are to:

a. Conduct Mass X-Ray Surveys of the general population and industry through county health officers.

b. Maintain a consultant nursing service,

c. Carry out health education in connection with publicity prior to and during Mass Chest X-Ray Surveys,

d. Maintain liaison with:

1. State institutions for better case finding
2. Director of the State Sanatoria
3. State and local Tuberculosis Associations
4. Local Health Departments for planning tuberculosis surveys and other matters in tuberculosis control
5. North Carolina Division of Vocational Rehabilitation

6. State Board of Public Welfare

3. Budget

The 1949-1950 budget for overall tuberculosis control was \$299,146, and of this amount, the State appropriation was \$27,336, and the Federal appropriation was \$271,810. The 1950-1951 budget is \$262,696, of which the State appropriation is \$27,965, and the Federal appropriation is \$234,731. Of the amounts noted above, \$100,000 was allotted to local health departments in 1949-1950, and \$75,000 in 1950-1951. It will be noted that the total Federal appropriation for 1950-1951 is \$36,450 less than the 1949-1950 budget. The budget of the **Tuberculosis Control Section** for 1950-1951 is \$122,880. In addition to the \$75,000 allotted to local health departments, there has been a considerable amount allotted to other divisions in the State Board of Health who are concerned with tuberculosis control, such as the Laboratory of Hygiene, Local Health Administration, and Public Health Statistics.

4. Mortality

The death rate from tuberculosis in North Carolina since 1916 has been markedly reduced as shown in the following table. The National rate is also given.

Tuberculosis deaths (all forms) with rates per 100,000 population: United States and North Carolina, 1916, 1946-49

Year	United States		North Carolina	
	Number deaths	Rate per 100,000	Number deaths	Rate per 100,000
1916	101,396	141.6	3,577	142.3
1946	50,911	36.4	1,182	32.5
1947	48,064	33.5	1,128	30.4
1948	43,833	30.0	949	25.0
1949	Not available		956	23.6

5. Morbidity

a. Mass Surveys as a Case Finding Procedure

Some authorities have questioned the value of Mass Chest X-Ray Surveys as a case finding procedure. In one populous area in another state, it was report-

ed that Mass X-Ray Surveys were responsible for discovering only 3.4 per cent of the new cases in 1947, when 500,000 x-rays were made during mass surveys in that year in the area. In North Carolina during 1940-1944, preceding the advent of mass surveys, 9,848 new cases of tuberculosis were reported to the State Board of Health. This is an average of 1,970 per year. For the five years, 1945-1949, since mass surveys have been conducted, 17,125 new cases, or an average of 3,425 new cases have been reported. This is a 73.9 per cent increase in total cases reported.

As further proof of the value of Mass Chest X-Ray Surveys, an evaluation was made of 450,615 persons who were x-rayed in thirty-one counties. For the six-month period prior to the surveys in these thirty-one counties, 327 new cases were reported. For the six-month period during and immediately following the survey, 1,233 cases were reported by those same counties—nearly four times as many cases as were reported prior to the time of the survey.

This increase in the number of new cases has come at a time when deaths from tuberculosis have reached a new low.

b. Incidence in the East as Compared to the West

In North Carolina, x-ray surveys representing 165,000 persons of selected eastern and western counties are of considerable interest. Counties in the east surveyed were Beaufort, Craven, Duplin, Hyde, Tyrrell, and Washington, and those which were surveyed in the west were Cabarrus, Guilford, and Rowan.

In the east, according to the survey, it was found that tuberculosis is far more prevalent than in the west. The high eastern rate cannot be attributed to the high non-white rate, because the non-white rate was lower than the white. In all probability, this was due to the fact that non-white individuals x-rayed did not constitute a representative sample of the population. The white rate in the east was 171.9 cases per 10,000 persons x-rayed, and in the west, it was 55.3. The non-white rate in the east was 114.8 and in the west it was 38.3.

The total number of tuberculosis cases found per 10,000 persons x-rayed was 148.7 in the east and 52.4 in the west.

Cases of tuberculosis found per 10,000 persons x-rayed in Eastern and Western areas of North Carolina by race

Area	Total	White	Non-White
Eastern N. C.	148.7	171.9	114.8
Western N. C.	52.4	55.3	38.3

c. Comparison of Tuberculosis Incidence In Industry and Agriculture

Tuberculosis rates in industry and in agriculture are also of considerable interest. Our figures in industry represent principally the textile industry. The survey of industrial occupations shows the rate to be 62.3 cases per 10,000 films. The agricultural rate is 168.1. These figures include both white and non-white. Broken down by race, the white rate in industry is 65.0 and the non-white is 36.9. In agriculture, the white rate is 204.6 and the colored rate is 121.4. From these figures it is seen that in every 10,000 persons x-rayed there were 139.6 more white farmers who had tuberculosis than industrial workers, and there were 84.5 more non-white farmers in every 10,000 persons surveyed who had tuberculosis than non-white industrial workers.

Cases of tuberculosis found per 10,000 persons x-rayed by occupation and race

Occupation	Total	White	Non-white
Industrial occupations	62.3	65.0	36.9
Agricultural occupations	168.1	204.6	121.4

d. Incidence of Probably Active and Questionably Active Cases

An evaluation of 89,836 persons x-rayed in the east and 84,035 persons x-rayed in the west, shows that in the east, 25.2 persons per 10,000 persons x-rayed were "probably active or questionably active cases of tuberculosis" and in the west, 19.0 persons per 10,000 showed the same finding, or an average of 22.2 per-

Table I—Age Distribution of Probably or Questionably Active Cases of Tuberculosis Found per 10,000 70MM. Films Taken In Selected Eastern and Western Counties. 1949

Age	Total Persons X-Rayed (70MM.)			Probably & Questionably Active Cases (14" x 17")			Rate Per 10,000 Films		
	Total	East	West	Total	East	West	Total	East	West
Under 15	10595	8628	1967	1	1	—	0.9	1.2	—
15-19	32054	14596	17458	34	18	16	10.6	12.3	9.2
20-24	21011	10560	10451	20	15	5	9.5	14.2	4.8
25-29	20476	10051	10425	30	15	15	14.7	14.9	14.4
30-34	18918	9135	9783	35	20	15	18.5	21.9	15.3
35-39	17647	8840	8807	33	14	19	18.7	15.8	21.6
40-44	14148	7122	7026	33	19	14	23.3	26.7	19.9
45-49	11277	5922	5355	26	16	10	23.1	27.0	18.7
50-54	9018	4674	4344	30	18	12	33.3	38.5	27.6
55-59	6602	3561	3041	48	32	16	72.7	89.9	52.6
60-64	4837	2600	2237	35	19	16	72.4	73.1	71.5
65-69	3772	2176	1596	29	19	10	76.9	87.3	62.7
70-74	1884	1111	773	19	11	8	100.8	99.0	103.5
75+	1251	718	533	13	9	4	103.9	125.3	75.0
Unknown	381	142	239	—	—	—	—	—	—
Total	173,871	89,836	84,035	386	226	160	22.2	25.2	19.0

Counties included in the survey were Pitt, Moore, Craven, Camden, Chowan, Pasquotank, and Perquimans in the East and Rowan, Davidson, Alleghany, Ashe, Watauga, Davie, Stokes, Yadkin and Randolph in the West.

sons per 10,000 for the state as a whole. These persons are candidates for hospitalization (Table I).

An evaluation of the same number of persons in the east and the west, noted in the preceding paragraph, shows that a larger percentage of young persons were x-rayed than were the older group, the 15-19 age group being the highest (Table II).

6. Survey Activities

a. As of September 30, 1950, Mass Chest X-Ray Surveys have been carried out in sixty-two counties. The schedule for 1950 and 1951 for mass surveys has been filled, and sixteen counties have been scheduled beginning 1952. Five counties are being resurveyed. Eighty-nine counties, not counting those which will be resurveyed, will have been surveyed at the completion of the present schedule. Five counties have not applied for survey. These do not include those

counties who conduct their own surveys. Either mass surveys or special surveys have been carried out in eighty-nine counties in the state.

b. A Mass Chest X-ray Survey in a county or district requires five units operating simultaneously with one unit in reserve. In addition to the x-ray technicians, there are also a clerical supervisor in the field, a chief technician, a part-time consultant nurse, and two health educators. The time required for a mass survey has varied from ten to sixty days, depending on the size of the county.

The 70 mm. x-ray picture is developed in Raleigh and the 14 x 17 picture, which is made to confirm the diagnosis, is developed at the site of the survey. The 70 mm. film is read in Raleigh and the large plate is read at the Central Sanatorium.

There are now two x-ray units operat-

Table II. X-Ray Films (70 MM.) Taken In Selected Eastern And Western Counties*,
Showing Percentage Age Distribution, 1949

Age	Total			Eastern			Western					
	70 MM. Films Taken			70 MM. Films Taken			70 MM. Films Taken					
	Cumulative			Cumulative			Cumulative					
	Number	%	Number	%	Number	%	Number	%	Number	%		
Under 15	10,595	6.1	10,595	6.1	8,628	9.6	8,628	9.6	1,967	2.3	1,967	2.3
15-19	32,054	18.4	42,649	24.5	14,596	16.2	23,224	25.9	17,458	20.8	19,425	23.1
20-24	21,011	12.1	63,649	36.6	10,560	11.8	33,784	37.6	10,451	12.4	29,876	35.6
25-29	20,476	11.8	84,136	48.4	10,051	11.2	43,835	48.8	10,425	12.4	40,301	48.0
30-34	18,918	10.9	103,054	59.3	9,135	10.2	52,970	59.0	9,783	11.6	50,084	59.6
35-39	17,647	10.1	120,701	69.4	8,840	9.8	61,810	68.8	8,807	10.5	58,891	70.1
40-44	14,148	8.1	134,849	77.6	7,122	7.9	68,932	76.7	7,026	8.4	65,917	78.4
45-49	11,277	6.5	146,126	84.0	5,922	6.6	74,854	83.3	5,355	6.4	71,272	84.8
50-54	9,018	5.2	155,144	89.2	4,674	5.2	79,528	88.5	4,344	5.2	75,616	90.0
55-59	6,602	3.8	161,746	93.0	3,561	4.0	83,089	92.5	3,041	3.6	78,657	93.6
60-64	4,837	2.8	166,583	95.8	2,600	2.9	85,689	95.4	2,237	2.7	80,894	96.3
64-69	3,772	2.2	170,355	98.0	2,176	2.4	87,865	97.8	1,596	1.9	82,490	98.2
70-74	1,884	1.1	172,239	99.1	1,111	1.2	88,976	99.0	773	0.9	83,263	99.1
75+	1,251	0.7	173,490	99.8	718	0.8	89,694	99.8	533	0.6	83,796	99.7
Unknown	381	0.2	173,871	100.0	142	0.2	89,836	100.0	239	0.3	84,035	100.0
TOTAL	173,871	100.0	173,871	100.0	89,836	100.0	89,836	100.0	84,035	100.0	84,035	100.0

*Counties included in the survey were Pitt, Moore, Craven, Camden, Chowan, Pasquotank, and Perquimans in the East and Rowan, Davidson, Alleghany, Ashe, Watauga, Davie, Stokes, Yadkin and Randolph in the West.

ing from the central office and are assigned to health departments from one to four weeks for the purpose of carrying out special surveys. In one such survey, 8,500 pictures were made during the period of a month.

Prior to carrying out a mass survey, two pre-planning conferences are held at the health department. The first conference is held six months prior to the survey, and the second conference is held two months prior to the survey. These conferences are attended by county and health officials, and the details incident to the survey are explained to local officials by representatives from the tuberculosis section.

THE IMPORTANCE OF RESEARCH IN TUBERCULOSIS CONTROL

BY DAVID T. SMITH, M.D.

Duke Medical School, Durham, North Carolina

(Editor's note: Dr. David T. Smith, Professor of bacteriology and associate professor of medicine at Duke University School of Medicine is President of the National Tuberculosis Association. Dr. Smith has been at the forefront in the field of research in tuberculosis for a number of years. In the following article Dr. Smith points to the progress that has been made in tuberculosis control through research and points out that by making even larger investments in research we can hasten the complete eradication of the disease.)

Before Robert Koch discovered the tubercle bacillus, tuberculosis masqueraded under at least seven different diagnoses, such as scrofula, Pott's disease of the spine, white swelling, lupus of the skin, and several diseases of the lungs, brain, and other organs. Not only were they thought to be different diseases, but all were believed to result from a particular type of inherited diatheses.

After the discovery of the tubercle bacillus it was possible by examining the sputum, to detect the individuals who were spreading the germs and to break the cycle of dissemination by isolating

7. Summary

Since the organization of the Tuberculosis Control Section, the total population of the counties in which such surveys were conducted is approximately 2,400,000 persons. As of September 30, 1950, 1,161,852 pictures have been made in the sixty-two mass and special chest x-ray surveys.

As about 95 per cent of the hospital cases we discover during mass surveys are new and hitherto unknown, and as all active cases are candidates for hospitalization, it can readily be seen that mass surveys are responsible for detecting in the population a sizable number of dangerous cases of tuberculosis.

these unfortunate victims in sanatoriums. This single method of attack, so simple in principle and yet so complex in practical application, remains the only sure way to eliminate the disease from the human race.

Bovine Bacillus Rare

The bovine tubercle bacillus, which is even more frequently fatal for cows than the human bacillus is for man, has been almost eradicated from this country. Theobald Smith discovered that infected cows spread the disease to man by excreting bacilli in the milk and to other cows by bacilli which left the sick animal through the intestinal discharges and contaminated the food of healthy cows.

If it had been necessary to examine the milk and feces of each cow to detect the carriers, even though each positive animal was slaughtered immediately, the process of eliminating the disease would have been much more expensive and much slower. Fortunately, further research revealed that recently infected cows, who were not yet excreting bacilli, would give a positive tuber-

culin test. Thus the problem of eliminating tuberculosis from cows became greatly simplified by routine tuberculin testing and then slaughtering the positive reactors.

Tuberculin testing in man gives us valuable information about the number of individuals who have been infected and at what age they acquire the infection, but it does not differentiate between the healthy individual who has healed his primary subclinical infection and will remain well, the early case who is not now but will soon be coughing out bacilli, and the thoroughly arrested patient who is no danger to the community.

The X-ray, discovered by Roentgen, will detect the early pulmonary infections before the patients are disseminating bacilli. It was apparent many years ago that routine, periodic X-ray examination of the entire population was an ideal method for detecting pulmonary tuberculosis in its earliest stages. Unfortunately, the cost of surveys with the full-size films was prohibitive. Years of research have been spent in the development of the new machines and the small films which make possible modern mass X-ray surveys.

Search for Germ Killer

Millions of man-hours and millions of dollars have been spent, some would say wasted, in the apparently hopeless search for a drug which would kill the tubercle bacillus in the tissues of the living man. The first glimpse of success came when Feldman and Hinshaw found that promin would cure experimental tuberculosis in the guinea pig. Unfortunately, the drug was more toxic for man than the guinea pig and, therefore, too dangerous to use.

Streptomycin, discovered by Waksman, was less toxic and more effective than promin. Streptomycin has proved invaluable in certain types of acute tuberculosis and as a preliminary treatment in preparation for thoracic surgery, but streptomycin is not the final

answer. Specific toxic symptoms develop when large doses are employed and tubercle bacilli become resistant to the drug in 20 to 90 days, thus limiting the period of time in which it can be used. The National Tuberculosis Association is supporting several different investigators who are trying to learn how streptomycin works, how and why tubercle bacilli become resistant, and the laws of bacterial heredity which determine such events.

The new German drug, TB-1 (one of the thiosemicarbazones), is quite toxic and not nearly as effective as streptomycin. The Swedish drug, PAS (para-aminosalicylic acid), is less toxic than TB-1 and less efficient than streptomycin, but when given simultaneously with streptomycin it delays for a number of weeks the appearance of organisms which are resistant to streptomycin. A number of new drugs and antibiotics are being developed and tested in various laboratories.

ACTH (adreno-corticotrophic hormone) will eliminate the tuberculin reaction in guinea pigs and man, stop the fever in 24 to 48 hours, and relieve all of the patient's symptoms in a few days. But Tompsett, Le Maistre, Muschenheim, and McDermott have found that when ACTH is discontinued all the symptoms return, the fever is more severe, and the disease may spread. However, in time investigators may find how to use ACTH with streptomycin, or some more potent antibiotic, so the symptoms can be controlled by the one and the tubercle bacilli destroyed by the other.

Our entire complex socio-economic-medical pattern for the elimination of tuberculosis is based on facts found by previous research carried on by hundreds of scientists in dozens of countries. We know enough now to eliminate tuberculosis but we may accelerate the process greatly and reduce the cost materially by making larger investments in research.

TB—CORNERED BUT NOT CONQUERED

FRANK W. WEBSTER, Executive Secretary
North Carolina Tuberculosis Association

Recently a Public Affairs Pamphlet promoted by the National Tuberculosis Association appeared with the appealing and encouraging title, **TB THE KILLER CORNERED**. In his thoroughly capable manner, the author, Alton L. Blakeslee, science writer for the Associated Press, has set forth statements backed by medical authorities which verify the truth contained in the title.

Truly the discovery of the tubercle bacillus by Koch; the rest therapy by Trudeau; the X-ray by Roentgen; the decision of a group of public spirited physicians and laymen to fight TB with knowledge; and the research and discovery of new drugs have all played important parts in cornering the killer. The fact that the killer is being cornered is one of the greatest medical and social achievements, even miracles, of our century. This is exemplified alone in the fact that since 1900 TB has been cheated out of 5,000,000 American lives.

But the immense task of **Conquering** TB is still ours to complete. The burden rests with the official agencies, the voluntary agencies, with all of the citizens of this country.

Cornered, but untrapped, TB is fighting back in the nation by attacking approximately 100,000 persons a year. This means that one year from now about 100,000 persons who are free from tuberculosis today will have the disease. It still kills more persons than any other single infectious disease. It killed 43,833 Americans last year and is responsible for the deaths of more young people between 15 and 35 than any other disease. It is costing the nation approximately \$350,000,000 a year. Although tuberculosis is commonly thought of as a disease of young adults, it kills approximately 1,636 children under 15 years of age each year. Furthermore, the number of older people dying from TB is increasing. Whereas the median age at death from

tuberculosis 10 years ago was 39, today it is 46.

In North Carolina TB is taking a desperate stand by keeping the case registers recording as many as 3,402 new cases annually, despite the fact that the 1949 death rate for the state is 23.6. Even with a state rate of 23.6 there are counties with rates as high as 52.1 and 61.3.

Because tuberculosis is a communicable disease, it is definitely a community problem. Being a community problem it requires the combined efforts of all community resources to conquer it. What then is the responsibility of tuberculosis associations in this movement? Tuberculosis associations, lest we forget, are committees of interested citizens banded together to fight a common foe. Their responsibility simply stated is to help government do a bigger, more comprehensive and increasingly effective job in preventing tuberculosis and in reducing it to an unimportant place in public health. While leadership in the campaign against tuberculosis today is being provided by medical profession, official health agencies, and the voluntary associations, all of whom are working in cooperation, the official agency is the responsible head of the work. The place in the picture on the tuberculosis association is that of an aid and supporter, occasionally a trail blazer of the official agency in what the latter is doing for the public benefit.

With this clarification let's consider some possible A. B. C's of program activities necessary to do an effective job:

- A. Adequate Case-finding
- B. Better patient services
- C. Continuous Campaign of information and education

In conducting each of these activities, consideration must be given to physical facilities, personnel, health education, record system, financial provisions and cooperation with other agencies.

In adequate case-finding the situation must be one in which there are enough X-ray machines—mobile, portable or stationary—to do the case-finding job. There must be doctors, nurses, technicians and clerks in sufficient numbers to do an efficient job. There must be an educational program directed toward the maximum use of available facilities. Where the official agency is not in a position to supply these it becomes the responsibility of the tuberculosis association to see that this need is met. This is being done through demonstration, through cooperation, and by arousing and mobilizing public sentiment thereby securing the appropriations necessary for additional facilities and other needs.

Before leaving the subject of case-finding it might be well to call to attention the efforts being put forth to promote the participation of general hospitals in programs for tuberculosis case-finding among patients and personnel. Doctors Robert E. Plunkett and Edward X. Mikol estimate that approximately 40,000 patients with unknown tuberculosis—active or questionably active—are admitted annually to general hospitals in the United States. According to Dr. Herbert R. Edwards, of New York, the number of cases of tuberculosis that may be discovered through hospital programs is anywhere from 2 to 10 times greater than that found in a community survey of similar numbers. Public health authorities, in general, agree that the hospital is one of the best single locations in which to conduct a tuberculosis case-finding program.

Tuberculosis associations—local, state and national—are promoting this project. Some associations are aiding in supplying equipment or contributing toward the general cost to make these programs possible. At Duke University Hospital an experimental case-finding program is in effect, the unit being supplied by the Division of Tuberculosis Control, State Board of Health. The Mecklenburg County Tuberculosis Association is purchasing an X-ray machine for the Good Samaritan Hospital to do X-rays of general admissions. The Greensboro Tuberculosis Association is

cooperating with the L. Richardson Memorial Hospital in this case-finding procedure by supplying the films on which the X-rays are to be taken.

Better Patient Services. For better patient services the NCTA and its local affiliates in addition to their responsibility to promote the enactment of necessary laws are attempting to initiate and demonstrate the newer developments in TB work. Services to patients present a real challenge. In this is included enough beds so that every diagnosed case in need of treatment can be hospitalized. We are approaching the goal here in North Carolina but it should mean hospitalization regardless of ability to pay. It should mean freedom from economic stress of the members of the tuberculous breadwinner's family. It should mean rehabilitation which begins at diagnosis and continues until the patient is restored to society with maximum usefulness. It should mean non-specific and specific medical treatment and it should include research in better methods of therapy and rehabilitation. These are the things for which associations strive. They are among the items for which Seal Sale dollars are spent.

Continuous Campaign of Information and Education. A continuous campaign of information and education of the general public is necessary, so that, (1) as individuals, as heads of families and as voters they may learn the essential facts about TB in order to develop a realization of community health needs so that adequate facilities will be established. (2) Instruction of individuals through schools, colleges and community groups in the techniques of personal hygiene, the personal methods of disease prevention, and the proper employment of modern medical aids to health so that modern knowledge and community facilities will be used. (3) Assistance to and cooperation in the professional education of social workers, nurses, teachers, physicians and others so that they may deal more effectively with the problems of TB. Education being the primary and indispensable weapon of the tuberculosis association, it is

not surprising to find listed among our activities cooperation in sponsoring an institute for health workers on social problems of TB patients; in sponsoring a Special Course on Tuberculosis for nurses, scholarships for teachers in health education; post-graduate courses for physicians and other courses designed to improve the health and welfare of the citizens throughout the state.

The 1949 Christmas Seal Sale in North Carolina was \$386,865.98. Five per cent of this amount was sent to the National Association. The other 95 per cent was kept for work in North Carolina. \$64,086.01 was budgeted to the North Caro-

lina Tuberculosis Association for its program and the larger portion or \$303,436.67 is being spent on local programs in the counties where the money was raised.

Listed below are the expenditures of the NCTA for the last fiscal year.

Health Education and Information	\$25,157.59
Rehabilitation	630.67
Administration	12,976.81
Seal Sale	10,301.23
Field and Organization ...	13,594.59
Research	300.00
	<hr/>
	\$62,960.89

THE ROMANCE OF THE CHRISTMAS SEAL

LEIGH MITCHELL HODGES

Philadelphia Evening Bulletin, Philadelphia, Pa.

In me, you see a man who, on the morning of December 11, 1907, being then rather young, was sitting in his office in the North American Building in Philadelphia.

For two years I had been much interested in anti-tuberculosis work, which—most of you won't appreciate this because you're not old enough—then was wholly unpopular. At that time few persons believed tuberculosis could be prevented or cured. It was regarded as an act of God, in which man's part was to submit patiently.

On that morning an office boy brought me a card with the name of Emily P. Bissell on it. I followed my usual custom and asked, "Is she good looking?" "Sure," he said. "Show her in," I said. She was good looking and had great charm; a voluntary Red Cross secretary interested in every health cause in Wilmington, Delaware. She also had a way of raising money.

One afternoon in the early autumn of 1907, a cousin of hers, a Wilmington physician, came to her and said, "Emily, unless we can raise \$300 we'll have to close the tuberculosis shack on the banks of the Brandywine. It would be a pity to send those poor people back to their close rooms." That shack was one of the first of the open-air experiments.

"How can I raise \$300 to fight tuberculosis—nobody's interested in it."

"Well," he said, "you've got to help us out."

She told me she sat for several hours wondering if there was any way she could do it; then suddenly she remembered that in the July issue of the "Outlook," a magazine no longer existing, she had read an article by Jacob Riis on the Christmas stamp used in Denmark in 1904.

"I wonder if it wouldn't be a good idea to get out a Christmas stamp here to raise the \$300."

She first went to one of the DuPonts who was a friend, and he turned her over to his advertising staff. When she outlined her plan to these experts, one of them made the historic remark—in view of what since has happened—"Why, Miss Bissell, Dennison sells Christmas seals ten for a penny. Who is going to spend a penny for a plain little stamp with 'Merry Christmas' on it?"

But she had the determination and decided to try it out herself. Two women friends agreed to back her to the extent of \$20, far more in 1907 than today. A printer agreed to print 50,000 of the little stamps she herself had designed—you know the wreath of holly with

'Merry Christmas' in it—and trust her for the payment.

The first stamps were put on sale in the Wilmington post-office lobby on December 9, and they didn't go 'like hot cakes.' The third day, when the sale was lagging, she thought to herself, "I think I'll go up to Philadelphia. The 'North American' is widely read in Wilmington. I'll see the Sunday Editor and ask him to put in a little piece about what we're trying to do."

The Sunday Editor, who was shocked by her request, said, "Miss Bissell, the very idea of joining up 'Merry Christmas' with the deadliest of all disease plagues! I wouldn't think of printing anything about it." The only thing she could do was to walk out of his office. But she had been reading my column, "The Optimist," which I still am writing, and she thought she would pass on a pleasant word about it while in the building.

"I just came up from Wilmington to ask a favor of the Sunday Editor, and I thought I would drop in and tell you how much I like your column." I thanked her and asked her to sit down. I never had met her before, and she never had seen me. After a brief silence I said, "I hope the editor granted your request."

"No," she said, "he didn't." So there was nothing left for me but to ask if it was anything I could do.

"I don't think so," and with that she opened the most capacious handbag I've ever seen. You girls who think the things you carry these days are large should have seen it! And out of it she took a sheet of those first Christmas stamps.

Isn't it a fact that in the life of each one of us there has at one time or another come along something we still don't understand; still can't quite grasp? Well, I have no more understanding today than I did then why at that moment I should have seen not small squares of perforated paper, but a flaming banner; something to be carried at the head of hosts of all sorts of people to make known a fact the world needed to know: that the worst of all

disease plagues could be prevented and cured.

I snatched it out of her hands, went downstairs two steps at a time, and barged into the office of the Editor-in-Chief, E. A. Van Valkenburg. I slammed it on his desk and said, "There's what will kill tuberculosis!"

He looked up and said, "What the hell do you mean?"

"Just what I said. You and I know that the one way to fight this plague is to make everyone aware that it can be prevented and cured. And here's a way to do it—within reach of everyone. This also carries the message of a Merry Christmas that will become merrier every year because of the work I'm sure it will do."

Then, blessed be his name, he said, "Ask Miss Bissell to send us 50,000 stamps tomorrow. Tell her the 'North American' is hers from now until after the first of the year, and please give all of your time to making known what can be done through this stamp. If the possibility of finally beating tuberculosis isn't news, then I don't know a damn thing about news."

When I gave his message to Miss Bissell, she almost fell off the chair. "Why," she said, "we only had 50,000 printed and some have been sold!"

"Have more made," I said.

"Oh, Mr. Hodges, you never could sell 50,000."

"Miss Bissell," I said, "this newspaper is yours until the first of the year. You have no idea what can be done with the full backing of a great newspaper. Get back to Wilmington as fast as you can and start those stamps coming up."

Then was set going the most intensive publicity campaign for one cause that ever was carried on. Of course, I had all the facilities of the newspaper at my command. I had a cut of the stamp made, and all those three weeks every article in the paper and many of the advertisements bore that as an initial. Within twenty-four hours I had statements from the President of the United States, the Chief Justice of the Supreme Court, the President of the Senate, the Speaker of the House—all approving this

Christmas stamp. Within another twenty-four hours I had similar messages from the head of every big religious organization in the country, and the news of the Merry Christmas messenger was flashed all over the paper until people began to think there wasn't any other news, which was exactly what we wanted.

Of course, we in Philadelphia were awaiting the first consignment of stamps from Wilmington. On the morning of December 14 they arrived. I was down in the Publication Office of the paper on the street floor waiting to see who might be the first purchaser.

Unfortunately news photography then was not even in its infancy—it was an embryo. There was no photographer present, but presently there would be a picture worth taking. The marble counter in that office was very high so people could conveniently write out want ads.

In came a really ragged newsboy; dirty, his clothes torn and one dog-eared copy of the paper under his arm. He reached up—he couldn't see over the counter—put down a penny on the marble and said, "Gi'mme one. Me sister's got it."

I went upstairs as fast as I could and into Van Valkenburg's office. "Now I know it will kill tuberculosis," I said, and told him about the newsboy. For five minutes we shared a tear duet of which neither one of us ever was ashamed.

It often has been said that I invented that newsboy. I am not that clever. I couldn't have invented such a combination of rags and skin-soil, nor the words he said. But I felt perfectly sure that, if the Christmas stamp could impress upon a street boy the fact that it could do something for those suffering from tuberculosis, it would wipe out the foe. Well, instead of the \$300 that was needed, we raised \$3,000.

Then, Miss Bissell and I went to Washington to see if we couldn't interest the National Red Cross in the stamp. "Will you make a speech?" she asked. Well, it never has been hard for me to do that—the only difficulty is to stop, which reminds me of a certain after-dinner speaker who talked till nearly

everyone was asleep, and finally looked at his watch and said, "Oh, I beg your pardon, I must have spoken longer than I intended, but my watch has stopped." Whereupon someone in the back row called out, "There's a calendar on the wall!"

In 1908 the Red Cross was quite a different kind of organization from what it is now, and the Board of Directors consisted largely of very swank women.

I made my speech. Now, it so happens that I knew both Admiral Peary and Dr. Cook, but I discovered both icy poles at the end of my speech. The silence could have been sliced with a knife. Robert Bacon, then Assistant Secretary of State, was chairman of the meeting; when I sat down, he came over and said, "Mr. Hodges, I hope you don't feel discouraged."

"Not the least," I replied. "Do you know of anything which finally triumphed that wasn't shouted down in some way at the start? This silence is great enough to seem a shout."

"Well, I am having these ladies over for a buffet luncheon, and I think possibly you might like a little food," he said. I never have refused any, so I went and the food had some effect on those be-diamonded ladies. One by one they sidled up, at a distance of course, and said, "I think it might be well for the Red Cross to have some interest in this." Before the luncheon ended nearly all of them had so made up their minds, and the Red Cross did sponsor the Christmas stamp in 1908 and for some years thereafter.

So much for the story of the birth and the foundling years of the Christmas stamp, no longer called a stamp because the government requested it be called a seal to avoid postal confusion. That is only the beginning of the story, however. You yourselves and thousands of others throughout this land have made the Christmas Seal the most miraculous piece of paper that ever came into existence. There never has been a job to match that done through the influence of these little squares of paper.

It has cut down the tuberculosis death rate in this country from 180 per hun-

dred thousand, to 29 per hundred thousand.

But, that's not enough. Tuberculosis will never be conquered until that death rate has been lowered to match that of smallpox, yellow fever, and other diseases now practically wiped out.

This brings me to what we must keep in our hearts and souls and minds. We like to think about the financial returns that annually come in from Christmas Seal Sales. This is a fine

thing because our work couldn't otherwise be carried on. But beware of being satisfied with what we have done. It is a wonderful record. But now, in this last lap of the journey toward final conquest, we must restore some of that spiritual enthusiasm which fired all of us when first we became interested in the Seal. The battle is only half won. It won't be wholly won until it isn't possible in all this land for any newsboy or anyone else to say, "Me sister's got it."

REHABILITATION—BY WHOM AND HOW

BY ISABELLE K. CARTER, Associate Professor
Division of Public Welfare and Social Work,
UNC Chapel Hill, North Carolina

Despite the construction of the word **rehabilitation**, its general use in tuberculosis work means something quite specific and understandable. It means helping the patient improve to the extent of his physical, social and emotional capacity. It also might mean the process of helping the tuberculosis patient to heal his disease and to make the necessary social, psychological, and physical adjustments. Both of these definitions relate to the activities of all professional personnel in the tuberculosis program. The very bigness of the definition places upon the different professional persons a responsibility to define **what** they can do and **how** they can do it.

This paper will be a short discussion of some of the ways of helping tuberculous patients developed out of the experience of the writer, while working in a sanatorium as a social worker. The principles that will be elaborated upon are attempts at finding common bases or principles in helping. The shortness of this paper prevents proper extension of these principles into their adaptation to the various aspects of the practice of social work within the tuberculosis setting. Limitations of the author prevent the application of these principles to the other professions active in the tuberculosis field: medicine, nursing, public health, health education, public health

nursing, occupational therapy, and vocational rehabilitation.

The first principle is that the helper be understanding and related to the feeling and thinking of the patient as he moves through his treatment. Each patient brings destructive and constructive attitudes of his tuberculosis and its treatment. The way these attitudes are expressed requires considerable understanding by the helper. A new patient tells the social worker with considerable feeling on admission that he just can't stay in the hospital . . . but yet he wants treatment—he is frightened of it . . . he can't endure the food . . . the nursing service is poor . . . and the doctor tells him nothing. The understanding helper knows this is part of his trouble about leaving home and indirectly a beginning of moving into treatment. It is part of this patient's effort to find himself and the nature of himself in relation to his situation. It is of no great surprise to a person who knows how patients move into new situations, to see this patient the next day eating his lunch with apparent relish and later that afternoon waiting to go into the treatment room.

Or, on the other extreme, the patient with deep trouble at the beginning of his stay in the sanatorium, who cannot say much, doesn't sleep well, and shows

little feeling, may be telling the staff by his behavior the depth of his problem. These distress signals call for highly skilled helpers if the symptoms persist.

Most patients, however, on coming into treatment, either grimly or avidly or both, start reckoning with the realities of the way to get well as against their fantasies and wishes that matters were different with them. If the helper can know and trust the capacity of human nature to attempt to resolve trouble, he can help the patient through this period. Arguing with the patient, "selling the service of the san," and admonishing him "to be a good sport" is a way of denying the capacity of the patient to find his own strength.

Beginning treatment, going through treatment, and finally getting to the arrested stage have to the helper their own consecutive and continuing problems. The helper may reflect—and should—the changing emotional tones of his patients through this series of experiences and learn how to help within the ever present new situation of the patient. The important thing to remember is, that to the patient, there is a start, a long stretch of care, and a time to live as an arrested case. In his terms, he looks forward to "getting well," "going home," and then in the deep recesses of himself are the fearful things such as "I may never get well," "I might as well die now—I will sometime anyway," and "Why did this have to happen to me?" These attitudes are real solid parts of the tuberculosis patient's life in treatment and change usually from the beginning to the end of his cure. These changes can be facilitated and hastened with understanding help.

In the principle previously discussed is concealed another which is, that help often times is spread out over a long time with both intensive and occasional contacts. This may appear to be "spotty" help and disconnected. Continuity and thoughtfulness, however, about the help being given can be maintained through the use of records and joint staff endeavor.

Most patients in the writer's experience need more intensive help around

social-emotional problems at the beginning and end of treatment than during the middle time in the cure.

When different professional persons are serving the same patient, there is a need for the services to be coordinated and specified. Since tuberculosis is primarily a medical problem, it is quite natural to state, as another principle, that the doctor should be the head of the helping group of professional people. He should be the head of the rehabilitation team.

This sort of leadership on the part of the doctor will require that he become familiar with the services of the other professional groups and respect what they can do as separate and distinct from the doctor's function. This in turn requires of each professional group that they know and are able to express their areas of competence. For example, it would be incumbent upon the social worker to state what she can do competently and for the doctor to respect her opinion as he would the opinion of any professional colleague. The doctor would need to be assured that he had competence in the various professional fields by finding out for himself the training requirements of the different professions and conducting a personnel assessment on each applicant. To summarize, each professional person helps within the area of his competence, and these efforts focused on the rehabilitation of the patients are coordinated and integrated by the helping team which is headed by the doctor.

Inherent in professional thinking and feeling is the responsibility that the recipient of help be respected. This is almost a gratuitous expression of principle but it needs to be restated constantly. Helping professions naturally draw persons to them that are eager to express themselves in helping others. This need on the part of the professional helper is a deep and important one. In some instances and at some times it can be an irrational projection, however, upon the person being helped. Sometimes advice giving by professional persons is extended into impractical and irrational control and management.

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The

Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.
Entered as second-class matter at Postoffice at Raleigh, N. C. under Act of August 24, 1912

Vol. 65

DECEMBER, 1950

No. 12



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J. W. R. NORTON, M.D., M.P.H., State Health Officer

JOHN H. HAMILTON, M.D., Acting Editor

THE EPIDEMIOLOGICAL APPROACH TO MASS X-RAY SURVEYS

BY ROBERT F. YOUNG, M.D., M.P.H.

County Health Officer, Halifax, N. C.

At the very outset, the writer wishes to make it perfectly clear that, in the following discussion, he is not attempting to prove anything statistically. It is recognized that the experiences cited here in connection with this specialized type of survey are very limited and particularly so when compared to the vast experiences that have been accumulated over the past several years during the mass x-ray surveys conducted throughout the country; however, based on certain established public health principles, the writer does wish to raise several pertinent questions in connection with mass x-ray surveys and, moreover, to merely suggest certain modifications of the mass x-ray survey which might be utilized much more economically and efficiently than the type of program which is now being conducted.

A brief stroll among the "giants that walked the land" during the early days of public health in this country and even until the present time will quickly convince one that public health, as we understand it today, has been developed and established upon what might be called the epidemiological approach. First, what do we understand by epidemiology? W. H. Frost prefers a definition adapted from Hirsch as follows: "The science which will give, firstly, a

picture of the occurrence, the distribution, and the types of the diseases of mankind in distinct epochs of time and at various points of the earth's surface; and secondly, will render an account of the relations of these diseases to inherent characteristics of the individual and to the external conditions surrounding him and determining his manner of life." In other words, the epidemiological approach seems to mean an *evaluation* of whatever problem or situation might confront public health workers. Isn't this the very thing, therefore, which has removed the guess work from our profession and placed it on a sound scientific basis?

To go a little further in the definition of this subject, one might turn to Smillie⁽¹⁾ who states "The epidemiological point of view is essential to good health department practice. In fact, most of the health leaders recommend to young men who are interested in making public health a career that they enter public health through the *epidemiological approach*. Here the opportunities for productive work are most fruitful and the knowledge gained will be of great value in subsequent years of activity in health administration." In other words, epidemiology or the *epidemiological approach* might be termed the "compass of public health"

which has been and should continue to be used to keep one "out of the wilderness."

Before proceeding with the discussion of the x-ray survey in Halifax County in which an attempt was made to apply epidemiological methods, it would be well to glance hurriedly through the literature to glean some of the high lights of mass x-ray surveys as they have been and are being conducted as a whole and to learn further what some of the public health workers are thinking of the results gained from these surveys to date. Moreover, it would be well at this time to review also what some workers specialized in tuberculosis control suggest from their experience as the best "hunting grounds" for new active cases of tuberculosis.

The first large community in the United States to have an intensive mass x-ray survey with the Division of Tuberculosis Control of the United States Public Health Service cooperating in force was Gaston County, North Carolina the home of the late Congressman Bulwinkle who was responsible for the Tuberculosis Control Bill enacted by Congress which has subsequently made the stepped-up tuberculosis control activities in this country possible. To date,⁽²⁾ every county in North Carolina has had the benefit of a mass x-ray survey, with the exception of six counties. A total of 1,100,000 North Carolina citizens have been x-rayed to date in these mass surveys, resulting in the discovery of between .5 and .7 active cases per thousand x-rays in the western part of the state and approximately one active case per thousand x-rays in the eastern section of North Carolina.

The first city of over 100,000 population to have the mass x-ray technique applied was Minneapolis⁽³⁾ in 1947, when the x-ray personnel of the United States Public Health Service was moved directly from North Carolina to that location. In this survey, approximately 306,000 citizens were x-rayed out of a total x-ray population of 407,000; in other words, approximately 75% of the x-ray population was screened, but the

big question is what about the remaining 25%. This survey produced 261 cases that were thought at that time to be active, or a discovery rate of .86 per thousand x-rays.

At this point it would be well to hear what Dr. J. A. Myers⁽⁴⁾ of Minnesota had to say regarding Tuberculosis Control and The Mass X-ray Survey. Some of us here today were privileged to be present when Dr. Myers gave his discussion on Tuberculosis Control in Minnesota at the Atlantic City meeting of the American Public Health Association in 1948. Dr. Myers stated that "by epidemiological methods tuberculosis in Minnesota has been reduced from a mortality rate of 120 per 100,000 in 1911 to 20 per 100,000 in 1947. A morbidity that required all sanatorium beds in 1926 was so reduced that several hundred beds were vacant in 1947. *The epidemiological procedures that have produced these accomplishments are applicable anywhere. They require patience, persistence, and strenuous work.*" Dr. Myers stated further that "this procedure (mass x-ray surveys) is of great value in that it screens from the persons *who respond* those who have gross disease in the 75% of the lungs visualized. This and an educational worth constitute the entire assets of a chest x-ray survey. It misses 80% of persons who have primary tuberculosis. Approximately ten per cent of clinical tuberculosis lesions are extrathoracic, all of which are missed by chest x-ray surveys."

Dr. Myers continued significantly, "Another limitation of the chest x-ray survey is the *failure of a considerable segment of the area population to respond*. If this is only ten per cent, it is too large, and there may be more contagious tuberculosis among this ten per cent than among the 90% inspected."

Since Dr. Myers referred to the educational worth of the mass x-ray survey, it would be interesting here to review what the literature gives us on this observation. In 1949, Galiher and Wright reviewed some work done by C. M. Derryberry and a group in which a public opinion poll was taken in Mont-

gomery County, Maryland, where a mass x-ray survey was being conducted at the same time as a survey in the District of Columbia. This poll was taken both before and after the survey. These writers stated "Improvement in people's knowledge during x-ray survey was slight, only 2.3 per cent. Nevertheless, improvement greater than this was noted in some section of the population and in response to certain questions. Improvement was most evident in age groups over forty-five, in persons with grammar school education or less, and in persons with tuberculosis in their families."

Although, following our mass x-ray survey in Halifax County in 1946 and 1947 we did not take a public opinion poll, we have the definite opinion, judging from the considerable increase in cooperation of the public at large in the Tuberculosis Control Program since the survey that the educational benefits gained in our county certainly were in excess of that noted by Derryberry.

Washington, D. C., and other cities and communities have followed Minneapolis in rapid succession until, at the present time, over 14,000,000 citizens in the United States have been x-rayed in mass x-ray surveys. Reviewing the results of these surveys, Jones⁽⁶⁾ of the National Tuberculosis Association writes "The fast tempo, community-wide x-ray survey aided by new scientific and technical developments has proved to be very important in case finding, but it is not locating all of the tuberculosis in a community. Records show that *few surveys of this type reach 100% of the given x-ray population. The estimated average coverage is somewhere between 70% and 80%.* This is good, far better than would have been possible without modern techniques. But it is not good enough."

Weber and Anderson ⁽⁷⁾ summarized in 1948 as follows: "It is axiomatic that effective campaigns in the field of public health cannot be weighed without *preliminary intelligence.* The needs of any Public Health Control Program obviously must relate to the exact nature and extent of the given problem.

For the success of local control programs in tuberculosis, administrators must avail themselves of all possible information to permit constant and critical evaluation of techniques and must proceed to integrate these programs by channeling resources and energies into *those areas where the need is greatest and where the problem can be met most efficiently and profitably.*"

In writing an appraisal of the contribution of mass radiography in discovery of pulmonary tuberculosis in the Baltimore survey, Silverman⁽⁸⁾ states "The analysis of the experience of the Baltimore City Health Department with the application of mass radiography to some fifty groups of the population constituting 48,175 apparently healthy persons, or about five per cent of the population, has revealed a net yield of tuberculosis cases which appears *quite modest in relation to the effort expended.*

"Whether or not mass x-ray examinations of all kinds of groups of apparently healthy persons who can be *easily and readily assembled should be continued remains to be determined.* One possible modification of policy is to *concentrate this effort more completely on adult groups living and working in the poor and more crowded sections of the city, and especially to seek out adult Negro groups.*"

Jacobs emphasizes a fact that is well known to all of us that "Studies of case finding experience show that in any given community three or four times as many new cases of tuberculosis will be found among the contacts of known cases as in any other group."

Keeping in mind the results to date of the mass x-ray surveys as conducted throughout North Carolina and the country as a whole, the writer now would like to call attention to the plans of execution and the results obtained from a specialized or epidemiological mass x-ray survey as conducted in a given area and among a selected group of the population within the area. Since it had been noted that the morbidity and mortality rates for pulmonary tu-

berculosis, particularly among the Negro race, has been higher in the Enfield Township in Halifax County than in any other section of the county, it was decided to do an x-ray survey in this township.

Although this township represented only fifteen per cent of the total population, during the three years preceding the x-ray survey 25% of all tuberculosis deaths in Halifax County occurred within this township. While only 19% of the Negro population lived within this township, 34%, or approximately one-third of all Negro deaths from tuberculosis in the county during the three-year study period occurred in this township. Moreover, throughout the county as a whole, although the Negro population constitutes only 58% of the total population, 66% of the total deaths from tuberculosis were among Negroes, while in the Enfield Township during the same three-year period preceding the survey, 88% of the deaths from tuberculosis occurring in the Enfield Township were Negroes. During 1947 and 1948, 100% of the deaths from pulmonary tuberculosis in the Enfield Township, or in this area were Negroes.

After localizing the principal tuberculosis problem in Halifax County within this township, a spot map was prepared pinpointing the cases and deaths from this disease during 1947-48-49. It was noted from this spot map study that the tuberculosis problem localized itself still further within the township around seventeen distinct and separate communities.

In order to establish a base line and determine exactly the number of Negroes living in these seventeen communities, the Negro principals and teachers in this area were called upon to conduct a census to determine the total x-ray population, the number of Negroes 45 years of age and older, the number of families giving a positive history for tuberculosis, and the number of contacts among these families admitting of tuberculosis. The latter information was used to check against our case register.

A meeting was held with these Negro principals and teachers at which time

they were briefed as to the fundamental principles in tuberculosis control that we felt they should understand and also that the people whom they were to visit should know. To aid the teachers in this educational work, a special folder was designed containing information which we felt was at the general level of education of the Negroes in this area.

The summary of the teachers' census revealed that this area in question contained a total of 3,372 Negroes fifteen years of age and older; 870 Negroes forty-five years of age and older; 146 families giving a history of tuberculosis; and 797 contacts listed among these families.

During the organizational and educational phases of this survey, all efforts were directed toward the particular group in question, namely, the Negroes in a selected area of the Enfield Township. We had no street streamers, brass bands, window placards, posters, nor parades. *Rather the individual approach was followed as strictly as possible.* This type of approach was much more difficult than the mass approach, and I suppose that pioneer workers in public health would have referred to it as "shoe leather epidemiology." A Negro principal in this area, it seems to the writer, "hit the nail squarely on the head" when he said, "Doctor, my people are ignorant and superstitious. Many of them are afraid of this type of thing. Many of them do not receive newspapers and, moreover, many of them do not even read. A lot of my people do not have radios. You will have to sit down with them in a personal appeal in order to persuade them to come in for these x-rays." Therefore, every available member of the Health Department was dispatched to these various seventeen communities during the x-ray survey in order to make personal appeals to these people in an effort to get them in for x-ray. Appeals were also made to all the land owners in this area for their cooperation in furnishing transportation for their tenants.

Each of the seventeen communities was given a specific date on which to report to the x-ray bus, furnished by

the State Board of Health, located in the town of Enfield, which was a considerable distance from most of the communities under study. The bus remained in this one location throughout the two and a half week period. This, in the writer's opinion, was a mistake, in that undoubtedly a much higher percentage of the people in this area could have been x-rayed had the equipment been made more readily available to them. The reason for leaving the bus in the one central location in the town of Enfield was to make certain we had good electric current and, therefore, good pictures. This point was well taken in that there was not a single film in this survey that was not diagnostic.

The usual organizational procedure was followed, having a steering committee consisting largely of local citizens representing the professional, various civic groups, and other organizations in the community. In the writer's opinion this steering committee should have been made up of more of the people in the actual community population of which x-rays were being made.

After the smoke of battle had cleared, it was found that a total of 2,790 citizens had been x-rayed during the two and a half week interval, of which 683 were white and 2,107 were Negroes. The 2,107 Negroes therefore represented 64% of the special segment of the Negro population which we hoped to x-ray. It must be remembered, however, in evaluating this figure that, in this survey, we began among the group that the conventional mass x-ray survey either misses entirely or merely touches.

Of the 2,790 total films, 78 were recalled for re-x-ray with 14 by 17 films and 100% of these 78 responded to this call.

The large films revealed that 36 of the 78 were essentially negative, while in the remaining 42 the following pathology was found:

Far advanced active tuberculosis	1
Moderately advanced active tuberculosis	4
Suspicious tuberculosis	4
Moderately advanced questionably active tuberculosis	1

Moderately advanced inactive tuberculosis	2
Minimal inactive tuberculosis	11
Minimal questionably active tuberculosis	1
Healed primary	5
Pulmonary scars and other pathology	13

The survey itself, therefore, revealed five active sanatorium cases, one white and four negroes, or a rate of 1.8 per thousand x-rays, as compared to less than one for the state as a whole, and as compared to a rate of .9 per thousand as discovered during the conventional mass x-ray survey conducted in the Enfield area five years ago when 2,229 citizens were screened.

It is interesting to note that, within two weeks following this special x-ray survey, two additional far advanced cases of tuberculosis were discovered among Negroes from this selected population, one of whom died within three weeks of the survey. Both of these cases were domestic servants and had told their employers that they had reported to the x-ray bus; however, this was determined definitely not to be the case. As a matter of fact, one of these cases had been visited by one of the nurses from the Health Department and urged to report to the x-ray bus, since she was a contact of a known case of tuberculosis. During the seven months following this special survey, five other far advanced, active cases of tuberculosis have been discovered among the Negroes in this group, making a total of seven additional far advanced, active cases of tuberculosis discovered in this selected population group since the survey. In spite of the intensive efforts on the part of those working in this study, these seven far advanced cases did not report to the x-ray bus in January. This fact serves to emphasize the arduous task of reaching and persuading the people in the segment of the population which has the highest percentage of tuberculosis, to come in for routine chest x-ray examinations.

SUMMARY

An epidemiological type of x-ray survey has been described which pinpoints

the efforts of the public health workers in a circumscribed area and within a certain segment of the population. It is noted that this type of survey has an individual approach rather than the mass approach. The group x-rayed was decided on following epidemiological studies.

The results of the chest x-rays revealed 1.8 cases of active tuberculosis per 1000 x-rays as compared with approximately one case per thousand x-rays in the eastern section and with .5 to .7 case per thousand population in the western part of the state.

CONCLUSION

If a military staff knew that the enemy had concentrated a large number of troops in a given area or location, would one suppose that the staff would continue to expend the maximum effort of it forces along the entire front, or would one suppose that special efforts would be made to attack and neutralize the concentrated forces. If epidemiological studies which one is trained and obligated to make in good public health practices, reveal to us that tuberculosis is concentrated in certain economic groups or certain racial groups, or even specific age groups, then is it not reasonable to consider at this time concentrating the efforts in tuberculosis control among these selected groups or segments of the general population. It is at least interesting to conjecture that, had the *Enfield* discovery rate of 1.8 prevailed throughout the state during 1949, 215 active cases of tuberculosis would have been discovered as compared with the 116 new cases that were discovered using the conventional mass x-ray survey, or approximately 100 additional cases would have been produced for the extra efforts of the epi-

demiological type of x-ray survey. It is again emphasized that this is merely a surmise.

Giving full credit for the good results produced and for the progress made in tuberculosis control by the conventional type x-ray survey in the past, might it not be well for the public health workers to make preparations now and gird our loins for an all out attack on the enemy where he is known now to have concentrated his forces, namely in the lower economic groups, particularly among the Negro race and among the older age groups in the rural sections of Eastern North Carolina.

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IMPORTANCE OF DEATH CERTIFICATES

BY WILLIAM H. RICHARDSON

State Board of Health, Raleigh, N. C.

Many times Bulletin readers have been given information concerning vital statistics in North Carolina. This work, is carried on in the Public Health Sta-

tistics Section of the State Board of Health. This section maintains a close relationship to the National Office of Vital Statistics. This latter agency,

which is a part of the U. S. Public Health Service, gathers vital statistics from the States, just as the Central Health Department, in Raleigh, gathers them from the various governmental units of North Carolina.

Most of the discussions of the past centering around vital statistics have dealt with the issuing of birth certificates and with deaths from various causes. Every year in North Carolina, roughly 30,000 people die of various causes. Yet, from 1923 to 1948, the crude death rate fell from 11.6 per one thousand population to 7.9. This, however, must not be confused with death rates from various diseases, which are computed on the basis of how many occur among every *one hundred thousand* of our population. Before going into the subject upon which this article is intended to shed most light, we should like to make reference to the order of the ten leading causes of death in North Carolina in 1923, and twenty-five years later—that is, in 1948. In 1923, the ten leading causes of death in North Carolina were in the following order: Pneumonia and influenza, heart disease, tuberculosis, apoplexy, nephritis, prematurity, diarrhea and enteritis in children under two years old, accidents other than motor, cancer and measles. Please keep these figures in mind, in comparison with those for 1948, when the ten leading causes of death were listed in the following order: Heart disease, apoplexy, cancer, nephritis, pneumonia and influenza, accidents not associated with motor vehicles, prematurity, tuberculosis, motor vehicle accidents and diabetes mellitus.

Some Notable Changes

Cancer jumped from ninth to third place as a cause of death. Tuberculosis dropped from third to eighth place. Heart disease took precedence over all others and diabetes mellitus appeared in the group in 1948, ranking tenth.

Here is a fact that is not, in the least, pleasant to contemplate. In 1923, there were 3,014 deaths from heart disease in North Carolina with a rate of 109.1 per one hundred thousand population, compared with 8,048 deaths in 1948, with a

rate of 211.9 per one hundred thousand population. But here, on the other hand, is a very encouraging comparison. Between 1918 and 1948 the infant death rate in North Carolina dropped from 101.8 per one thousand live births, to 35.3, while maternal deaths fell from 10.8 per one thousand live births to 1.9. You will note that, while death rates for various diseases are based on each one hundred thousand population, the death rates for infants, and for mothers dying in child birth, or as the result of pregnancy, are based on each one thousand live births. The same is true of the over-all or crude death rate.

Route Of A Death Certificate

The Public Health Statistics Section of the State Board of Health has just issued an attractive leaflet, telling how death certificates are filed in North Carolina. This publication is highly illustrated and done in colors. What we propose to do just now is to tell you, in simple language, the twelve steps necessary for the completion and filing of a death certificate. It was pointed out earlier that around thirty thousand people die in North Carolina each year. This means the issuance of that many death certificates.

When a person dies, the first step is for the undertaker handling the body to fill out the personal items on the certificate immediately after the death occurs. The undertaker then takes the death certificate to the physician who attended the deceased patient. If there was no attending physician, the death certificate is turned over to the local health officer.

As we follow the process, we see that, as a third step, the physician specifies the cause of death, signs the certificate, and then returns it to the undertaker. The undertaker files the certificate with the local registrar of vital statistics and secures a burial permit. A burial permit is absolutely necessary for the interment of ever deceased human being. The same registrars that receive birth certificates are responsible for receiving death certificates and issuing burial permits. Burial is not authorized until a proper permit is issued. This, as you

can readily see, minimizes the possibility for fraudulent burials; that is, for example, a burial where no person actually is interred, but where one might wish to disappear, in order to have his insurance or some other claim collected, or to be rid of a wife or husband. After the burial permit has been issued, the funeral can take place.

Let us follow the death certificate, itself. As a seventh step, the local registrar of vital statistics makes a copy for the register of deeds. A certified copy of the certificate can be obtained from the original of deaths for a small fee. The original copies of all death certificates are mailed by the local registrars to the State Health Department in Raleigh on the fifth day of each month. The State Health Department has a record of all death certificates which have been duly filed since October 1, 1913. Certified copies of these can be supplied for a fee of fifty cents each.

Why The Necessity

It is pointed out in the leaflet we are discussing that one of the main reasons for placing so much emphasis on the importance of death certificates is that certified copies are necessary specifically for insurance claims, pensions, inheritance and re-marriage after the death of husband or wife. After its journey through the hands of various persons and officials, death certificates are kept as permanent records in the vaults of the State Board of Health and they play an important part in the preparation and compilation of vital statistics.

Hereafter, when you hear the term "vital statistics," remember that vital statistics mean the bookkeeping of life and death. In years to come—in fact a thousand years from now, if humanity

has not destroyed itself by that time—any man or woman will be able to trace his or her ancestry back through the centuries, by means of vital statistics records of both births and deaths. As it is now, it is often very difficult to trace one's ancestry back farther than a few generations.

Back in the days of William, The Conqueror, a sort of census of England was made and the results were recorded in what was known as the "Domesday Book." In this book were recorded the names of those who owned land in England, and some of the names are somewhat familiar to this day. One of the most useful agents for preserving names and family records has been the Church, especially that section of the Church which records the baptism of its infants and other personal data. Unfortunately, however, many of the denominations have no such records, especially those which do not baptize their infants.

Efficiency Increasing

The efficiency of vital statistics reporting is gradually reaching a higher level of usefulness. Our vital statistics laws are being strengthened as need for this arises; and in various ways, complications are being eliminated and simplifications substituted. It is very important in gathering complete facts about individuals and families to know the exact date on which this person or that died. In most of the older families, these records have been kept in family Bibles, and it might be added, in this connection, that a record appearing in a family Bible, if it dates back over a sufficient length of time, is considered perfectly good evidence in helping to secure a birth certificate, or in establishing the date on which the recorded person died.

NOTES AND COMMENT

By ACTING EDITOR

CORRECTION—

On page 15 of the September, 1950 Health Bulletin we carried a book review of "American Red Cross Home

Nursing Textbook." We made an error in the price—The cloth bound copy is priced at \$1.00; the paper bound copy is 60¢. If any one other than the Amer-

ican Red Cross had edited this excellent home-nursing textbook, the price would certainly have been \$2.00 or more. This book is published by the Blakiston Company of Philadelphia.

RURAL HEALTH CONFERENCE TO BE HELD IN MEMPHIS

The sixth annual National Conference on Rural Health will be held in Memphis, February 23-24. It will be sponsored by the Committee on Rural Health of the American Medical Association in cooperation with national farm organizations.

More than 700 farm and health leaders—including representatives of health and farm groups, farm newspapers, agricultural extension organizations, rural health committees, schools, public health officials and others—are expected to attend. Sessions will be held in the Peabody Hotel.

The theme will be "Why Wait—Let's Do It Ourselves," according to Dr. F. S. Crockett of Lafayette, Ind., chairman of the committee, who made the announcement. Dr. Crockett will outline the national rural health program.

Other speakers will relate what is being done to improve health in rural areas. The activities of health councils will be stressed.

"The conference will take on increased significance because it will reflect the putting into effect of the knowledge gained at the previous meetings," said Mrs. Arline Hibbard of Chicago, secretary of the A.M.A. Committee on Rural Health. "These meetings have been drawing a larger attendance each year because they are a forum at which the successful and unsuccessful methods of improving rural health are brought into the open."

State rural health committee chairmen will hold a preliminary meeting on February 22, the day before the conference opens.

CALLS FAMILY DOCTOR GUIDE IN OLD AGE

With the problems of aging increased as a result of the ever-lengthening life

span of man, the family doctor is in a position to guide older patients "into the green pastures of old age," in the opinion of a Kansas City (Mo.) surgeon.

Writing in the *Journal of the American Medical Association*, Dr. Milton Buford Casebolt said the role of the general practitioner is "that of family counselor, skilled in the handling of emergencies in the home and a kindly guide to lead his patients to the achievements of ripe, mature old age."

Dr. Casebolt served as chairman of the Section on General Practice at the annual meeting of the American Medical Association in San Francisco last June.

"More persons are reaching old age than ever before," he pointed out. "In the last 50 years a generation has been added to the life span. Prior to 1900 life expectancy was about 40 years; in 1950 the expectancy figures are approaching 70 years.

"Diseases of the aged offer a challenge to the general practitioner. He must know more about the disorders of old age and the corrective measures to cushion the aging process in the human body.

"The process of guidance of persons into ripe old age involves rational living, mental maturing and the acceptance of anatomic and pathologic changes in the human body.

"The physician must learn more about the elderly patient who comes to his door. He must offer constructive medicine to the aged. A number of avenues are available in the approach to the problem.

"They are: (1) continued research in the diseases and disorders of the person over 50; (2) education of the geriatric (aged) patient; (3) environment control, and (4) individual guidance.

"The medical aspects involve: (1) periodic health inventory; (2) individual guidance by the family physician; (3) correction of nutritional and glandular deficiencies, and (4) transition from active, aggressive middle age to a more quiet and serene old age, an aspect that must be well understood by the doctor

and the patient. The family physician must furnish the technic and be the traffic manager or director."

He pointed out that the family doctor finds himself many times in the field of mental and nervous disorders. He sees the patient in the beginning of psychotic changes—"the personality deviations at this stage."

"Fully one third of the persons who come to my attention are suffering from anxiety complexes, worry, apprehension and fear," he said.

"There are three approaches to the problem.

"First, there is no happy solution. Re-signation to the inevitable must be instilled in the mind of the sick person. Here the physician must call for courage and lean heavily on the field of religion.

"Second, the situation involves others than the person who is ill. By conferring with interested parties adjustments can be made to solve the problem.

"Third, this group of facts involves the individual for whom, by alteration of his or her mental attitudes, values can be created on which the patient can build a new emotional bridge over which to cross the chasm of despair and confusion into the sunshine of cheerfulness, hope and faith."

HAVE A COLD? KEEP IT TO YOURSELF, ADVISES DOCTOR

Keep that cold to yourself by staying away from other people, advises Dr. Donald A. Dukelow of Chicago, consultant in health and fitness for the Bureau of Health Education, American Medical Association.

Dr. Dukelow, writing in *Today's Health*, a publication of the A.M.A., pointed out that with the approach of the season of rapid temperature changes, frequent wet feet or wet clothes and increased exposure to infection in closed rooms, there is an increased risk of colds.

"Most of us take a cold in our stride and go about our work just the same," he said. "Maybe we growl a bit and feel rather nasty, but we think we can get by and it will soon wear off.

"What's wrong with this picture? In the first place, anyone who goes to the office or sends a youngster to school with a fresh cold is a public nuisance. He needlessly exposes countless people to the infectious disease that causes the loss of more man-hours than any other.

"A few of those who get his cold may develop pneumonia or have an allergy or chronic sinusitis flare-up. As far as he himself is concerned, a cold may be only a cold; yet many others will develop complications or catch a superimposed infection if he doesn't reduce his contact with them. With efficiency at a low level during an acute cold, the benefits from working are far overbalanced by the risk incurred.

"From all points of view—public health, personal health and your own public relations with your associates—the important factors in the care of a cold are to stay home, be quiet, make yourself as comfortable as possible and keep your cold to yourself. Nobody else wants it. And nobody wants you when you have a cold."

DIABETIC DOCTORS PROVE ONE CAN LIVE LONG AND REMAIN ACTIVE

A diabetic person can take hope from the personal experiences of physicians suffering from the same disease. Diabetic doctors—and these are estimated at about one out of every 40—have proved that by adherence to a proper regime they can conduct their normal activities and look forward to a life expectancy almost as long as that of the average physician.

This optimistic outlook was presented by Dr. Robert F. Bradley of Boston in an article in the *Journal of the American Medical Association*. Dr. Bradley, associated with the George F. Baker Clinic of the New England Deaconess Hospital, made a study of the records of 475 diabetic physicians consulting the Joslin group between 1898 and 1947.

(The Joslin group is headed by Dr. Elliott P. Joslin, clinical professor of medicine emeritus at the Harvard

School of Medicine, Boston, and one of the world's outstanding specialists in diabetes.)

From this study, Dr. Bradley concluded that the average diabetic physician will live almost as long as the average physician and will slightly outlive his nonmedical contemporary. He also concluded that it is worth while for a diabetic person to enter medical school if (1) he shows none of the degenerative complications of diabetes; (2) he demonstrates his ability and willingness to control his diabetes, and (3) his duration of diabetes to time of entrance is less than 15 years. Under the same conditions, a medical school need have no hesitation in receiving such a student, he said.

"Once embarked in the study of medicine, the physician in whom diabetes develops need not give up his chosen profession," he added. "He should adhere to the hygienic practices that will keep him in the best physical and mental condition, in order to prevent renal (kidney) complications and postpone as long as possible the lethal effects of cardiovascular disease."

Dr. Bradley cited the results of medical advance. In the era before treatment with insulin (1898-1922), the average age at death of diabetic physicians was 56.9 years. In 1948, it was 67.3 years. The duration of diabetes in fatal cases rose from 8.5 years in the pre-insulin period to 15 years in 1948.

Diabetic coma, which at one time accounted for 35.3 per cent of all deaths in stricken physicians, has practically disappeared as a cause of death. Infections and gangrene, likewise, have almost disappeared as a cause of death.

He gave a number of examples of continued activity although diabetes has been of long standing. A 68-year-old physician who has had the disease for 41 years carries on a limited practice. A 61-year-old doctor who has had diabetes for 35 years reported he was conducting an active practice. His insulin dosage has been approximately 70 units daily since he first began taking it in 1922.

CALLS FOR SUPPORT OF BETTER WORLD HEALTH PROGRAMS

There is likely to be a great demand for qualified American medical personnel to aid in the overseas health programs being conducted by the World Health Organization of the United Nations, according to Dr. Edward J. McCormick of Toledo, Ohio.

Dr. McCormick, a member of the Board of Trustees of the American Medical Association and a member of the United States delegation to the third WHO assembly in Geneva, Switzerland, last May, said these programs demand the full support of the American medical profession. He characterized the projects as "an essential part of the over-all effort of the freedom-loving nations of the world to create conditions which will provide a firm foundation for a lasting peace."

Writing in the *Journal of the A.M.A.*, he said:

"The World Health Organization is engaged in a gigantic task. It is concerned with raising standards of medical education, fortifying national health services, assisting in control campaigns against infectious diseases and codifying and classifying medical information of international importance.

"The WHO works closely with the World Medical Association (composed of 39 national medical associations, including the A.M.A.) on technical problems. It works with governments in raising health standards in member countries. The WHO is meeting a real need in this shrinking world in fulfilling the obligations of an international public health agency."

The WHO was formed in June 1946 and its constitution recognizes that the "health of all people is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and states." At the third assembly, delegates were present from 57 member states. All of the members of the Soviet block, with the exception of Poland, have withdrawn, and Poland did not send a delegate.

"This meeting of delegates from near-

ly all the noncommunist nations of the world assures the continuity of cooperation in public health and determines the strategy for the international offensive against the major diseases," Dr. McCormick said.

When the WHO was formed, malaria, maternal and child health, tuberculosis, environmental sanitation, venereal diseases and nutrition were assigned priorities. At the last meeting, plague, cholera, yellow fever, smallpox and typhus were added to the list of priority programs.

The United States will provide \$2,481,159, or approximately one third, of the 1951 budget of \$7,300,000.

NUTRITION IS ASSOCIATED WITH WELL-BEING OF BABIES

Nutrition research has been a factor in child health and a contributor to the increase in life expectancy, according to Dr. Philip C. Jeans, professor of pediatrics in the College of Medicine, State University of Iowa, Iowa City, and member of the American Medical Association's Council on Foods and Nutrition.

(A baby born in 1900 had an expected life span of 49.2 years; one born today has an expectancy of about 68 years.)

Writing in the American Journal of Diseases of Children, a publication of the American Medical Association, Dr. Jeans pointed out that nutrition knowledge is increasing at an accelerated rate and that "we cannot even guess what tomorrow will bring."

He stressed particularly the application of nutrition research to pediatrics, which deals with prevention and treatment of diseases of children.

"Our knowledge includes a better understanding of the functions of minerals, vitamins, and amino acids and an increased knowledge of the relation of food to health," he said.

"Other discoveries are imminent. For example, general availability of fat emulsions for use in parenteral (other than by mouth) feeding is just around the corner."

He said that one long-term trend of nutrition research on pediatric practice

has been a more rapid growth of infants and children. He added:

"Body length is significantly greater now than it was 30 years ago, and it has become necessary to change our concept of normal growth. Rickets, scurvy and nutritional anemia, once so common, are now almost rare. Babies with marasmus (progressive wasting and emaciation) formerly were common in our hospital wards, but now they are exceptionally rare. The mortality rate among prematurely born babies has been significantly reduced.

"These and other improvements are attributable to changed concepts as to what constitutes an adequate diet for infants and children.

"One can list many contrasts in the past 35 years. Vitamin C was unknown 35 years ago, and the feeding of orange juice to babies was not routine until some years later. A similar statement may be made for vitamin D.

"We now recognize that iron and iron-containing foods are necessary additions to the diet in early infancy and that the thiamine intake of young babies is borderline until thiamine-containing foods are added. Babies are now fed much more abundantly than formerly.

"Another factor that affects the health and welfare of babies is the diet of the mothers during pregnancy. It has been found that good nutrition of the mother makes childbearing less hazardous for both the mother and the baby."

He added that poor maternal diet is associated with complications of pregnancy and with illnesses of babies in early life.

DOCTOR BLAMES EYES FOR 25 PER CENT OF HEADACHES

Eyes are a cause of headache in 25 per cent of patients, a Detroit ophthalmologist reported in the Journal of the American Medical Association.

"More patients consult medical clinics because of headaches than for any other single complaint, and for the same reason they most frequently consult an oculist," said Dr. Albert D. Ruedemann,

professor of ophthalmology at Wayne University School of Medicine.

"There is probably more medicine sold for headaches than for any other condition. Some of the large drug concerns build up tremendous fortunes by relieving the ordinary headache.

"It is the great social excuse for avoiding disagreeable engagements. While it is easy to label the patient neurasthenic (given to nervous prostration) or hysterical or just nervous, the headache may be the forerunner of a serious intracranial disease."

He said most eyes are overused, either from too much use or from use under poor working conditions.

He listed as possible victims of faulty eye functioning: The girl with a nervous breakdown, the child who is inattentive, the person in business who has a headache at noon which is relieved by lunch and then has a recurrence about 3 or 4 o'clock, the clock watcher, the student who cannot concentrate and the convalescent patient who reads in bed and has a headache.

"They may require medical exercises, surgical treatment, glasses or all three," Dr. Ruedemann said.

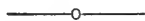
"Nearsighted persons do not have headache or head pain unless the nearsightedness is unequal or severe or unless they are abusing their eye. Nearsightedness in combination with a muscle error may cause trouble.

"Farsighted persons are apt to have frontal headaches which are moderate to severe and are present almost daily in the afternoon or evening. Farsightedness sometimes is definitely associated with certain types of work. The diagnosis is easy to make and the treatment is a pair of glasses used therapeutically and not as an aid to vision.

"If there is an inequality in the amount of error in the two eyes the pain may be severer over one eye and more common as a cause of headache.

"Neck pain is more frequently due to ocular muscle imbalance than to anything else. The neck muscles function primarily to move the head so that the eyes will be in a position to see."

Dr. Ruedemann suggested that every child before entering the first grade should have his eyes tested so that he can be protected against abusing inadequate or deficient eyes.



DOCTOR REPORTS UNIVERSAL 'MEDICINE' GOOD FOR TREATING ALL DISEASES

A universal "medicine" good for treating all diseases was reported today by Dr. W. W. Bauer of Chicago, director of the American Medical Association's Bureau of Health Education.

The prescription goes something like this: Take three parts of the kindness, personal interest and knowledge of human nature of the old-fashioned horse-and-buggy doctor, mix well with one part of the spirit of service and self-sacrifice, and apply liberally to the human factor involved in every illness.

Results are guaranteed to be gratifying, Dr. Bauer indicated, whether the treatment is known by the older name "general practice" or the newer term, "psychosomatic medicine."

Writing in *Today's Health*, A.M.A. magazine of which he is editor, Dr. Bauer cited the comeback of the family doctor as evidence that the prescription is effective.

Antibiotic drugs, atomic energy in medicine, and other great scientific advances of the past 50 years enable the modern doctor to relieve suffering and save lives in many situations in which he would have been helpless a half-century ago, Dr. Bauer pointed out. These victories and the growth of specialism in medicine have not subtracted from the responsibilities of the family doctor as was believed until recently. They have added to them.

"A few years ago the last sad rites were read again over the supposed professional remains of an American institution known as the general practitioner of medicine," Dr. Bauer said.

"The general practitioner was not and is not dead. Neither will he be. He is as necessary in an age of specialization as he ever was; in many ways even more so.

"The growing concept of psychosomatic medicine, with its accent on the kind of patient who is ill rather than on the illness which afflicts the patient, should make the family doctor of 100 years ago, if his spirit could be hovering nearby, smile a bit tolerantly. He always knew that it was folks that mattered, and that the doctor who understood and genuinely liked people was a better doctor than he who did not, even when their medical knowledge was identical.

"What has the general practitioner to offer the American family?"

"Eighty-five per cent of the ills from which human beings suffer can be cared for by the modern family doctor with no more equipment than what he ordinarily carries in his bag. Perhaps the most important service the general practitioner renders is not a service at all, but a relationship which permeates all services. This is his function as friend and confidant, who becomes well acquainted with the family, interested in all its members, cognizant of their problems, and always ready to help.

"The old-time general practitioner, especially in smaller towns, was not only doctor but philosopher and general all-around 'Mr. Fixit' for his patients. As community conditions have changed, this relationship has changed, but it still remains fundamental to the best medical care. It is the threat to personal relationships between doctor and patient which has been one of the principal bases for medical opposition to compulsory health insurance. Anyone who has ever been ill knows that without confidence in the doctor, half the battle is lost. Conversely, with such confidence, the chances for good progress are greatly enhanced.

"The ordinary illnesses of children can be cared for by the general practitioner, and in most instances do not require the services of a specialist. Ninety per

cent of well-baby care in the United States is by general practitioners. Under this care and supervision, the infant death rate has fallen year by year to new lows, and continues to fall.

"For the adult, the general practitioner should be the first resort when illness threatens. If the patient tries to select his specialist direct he may simply go to the wrong source and have to be referred again.

"The newly aroused interest in the general practitioner does not mean a return to the past. There is plenty of room in the medical picture for many of the personal qualities of the old-time practitioner, but to these will be added modern scientific training and experience."

AUREOMYCIN SHOWS PROMISE AS TREATMENT FOR MUMPS

Results obtained in treating three patients with mumps suggest that aureomycin, an antibiotic drug, may be of definite value in this disease, according to two doctors from Sayre, Pa.

Two women treated for mumps with aureomycin showed definite improvement within 24 hours after receiving the first dose of aureomycin, Drs. Wilfred D. Langley and John Bryfogle say in the *Journal of the American Medical Association*. Aureomycin was given to both women on the second day after swelling in the glands began.

Another patient, a man, received the drug less than 24 hours after symptoms of mumps were first noticed. Forty-eight hours after treatment was begun, he showed definite improvement.

"While no definite conclusions can be drawn from treating three patients in the manner described, the results obtained would suggest that aureomycin may be of definite value in this disease," the doctors point out.



